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WYOMING MINERAL YEARBOOK

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State of Wyoming

Economic Development and Stabilization Board

Cheyenne, Wyoming

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Duplication or quotation of material in this publication is welcomed, but it is requested that the Mineral Division, Economic Development and Stabilization Board be credited.

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INTRODUCTION

The minerals industry is by far the largest single contributor to the valuation of the State of Wyoming. 1986 valuation on minerals produced in 1985 was $5,514,921,883. This is 70% of the state's total valuation and places Wyoming among the top ten mineral producing states in the nation.

This report outlines the distribution and status of the minerals industry in Wyoming during 1985. The primary mineral commodities produced in the state are reviewed individually and a section on historical mineral production is included in the Yearbook. This section enumerates yearly production figures for the state's primary mineral commodities: bentonite, coal, natural gas, petroleum, trona, and uranium from their first commercial development to 1985. The production projections for the next five years give an indication of growth or decline of a particular mineral commodity in both the state and individual counties. Estimates beyond five years are not made because of increasing difficulty in making accurate predictions due to changing economic factors, governmental regulation, decreasing reserves and international developments. The change in format made in this edition, particularly the addition of color will hopefully make the relationships between mineral commodities more obvious.

The narrative sections present an overview of the minerals produced in the state and the status of the mineral industry in each county.

The reader desiring more detailed information on the location of various projects or resources is referred to the Oil and Gas Map of Wyoming and the Mines and Minerals Map of Wyoming, available from the Geological Survey of Wyoming and the EDSB Mineral Development Monitoring System.

Bar graphs for county mineral valuation were prepared for those counties where minerals accounted for a least 25% of the total assessed valuation.

Production figures in this Yearbook are net or taxable figures and do not include federal or state royalty production because it is not included in the assessed valuation. The difference between gross production varies from commodity to commodity because of the changes in percentage of government royalties and the variation on how much is produced from government leases and from private leases. The gross production and the taxable production are as follows:

	Oil (bbls)	Natural Gas (mcf)	Coal (tons)	Uranium (tons)
Gross Production	130,984,917*	597,896,090*	140,589,139	887,081
Net Production	123,304,242	416,565,118	135,105,204	619,965

	Bentonite (tons)	Trona (tons)	Gypsum (tons)
Gross Production	2,606,598	11,795,916	348,164
Net Production	2,588,229	10,776,304	348,164

Appreciation is extended to the mineral companies of Wyoming for their assistance and cooperation in providing estimates of production during the next five years. Also, help and information provided by Lee Wooderson, Jim Felton, and Rocky Hopson of the Ad Valorem Tax Division of the State Department of Revenue and Taxation proved invaluable. Special thanks are extended to Gary Glass and his staff of the Geological Survey of Wyoming for assistance in estimating future production levels. Also, much valuable data was supplied by Don Basko of the Wyoming Oil and Gas Conservation Commission.

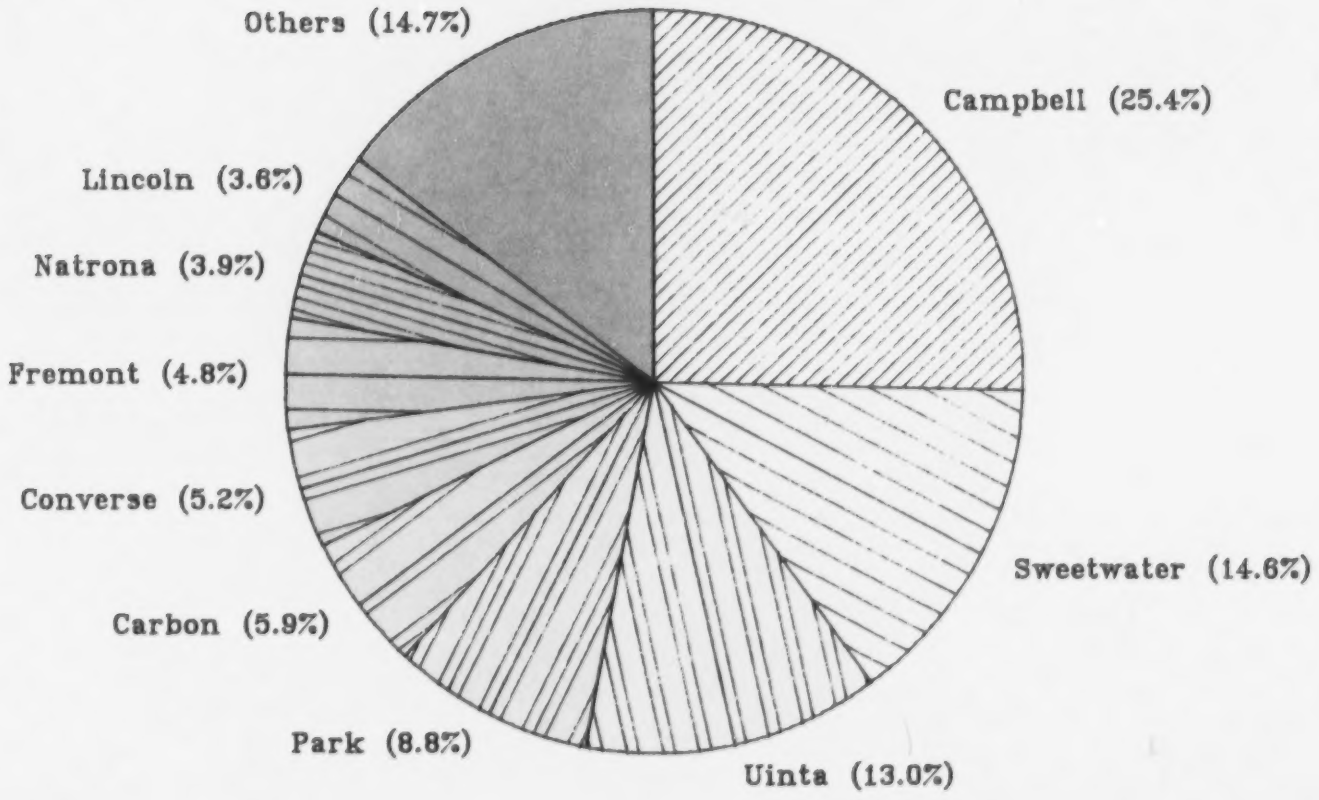
Any questions or comments may be addressed to:

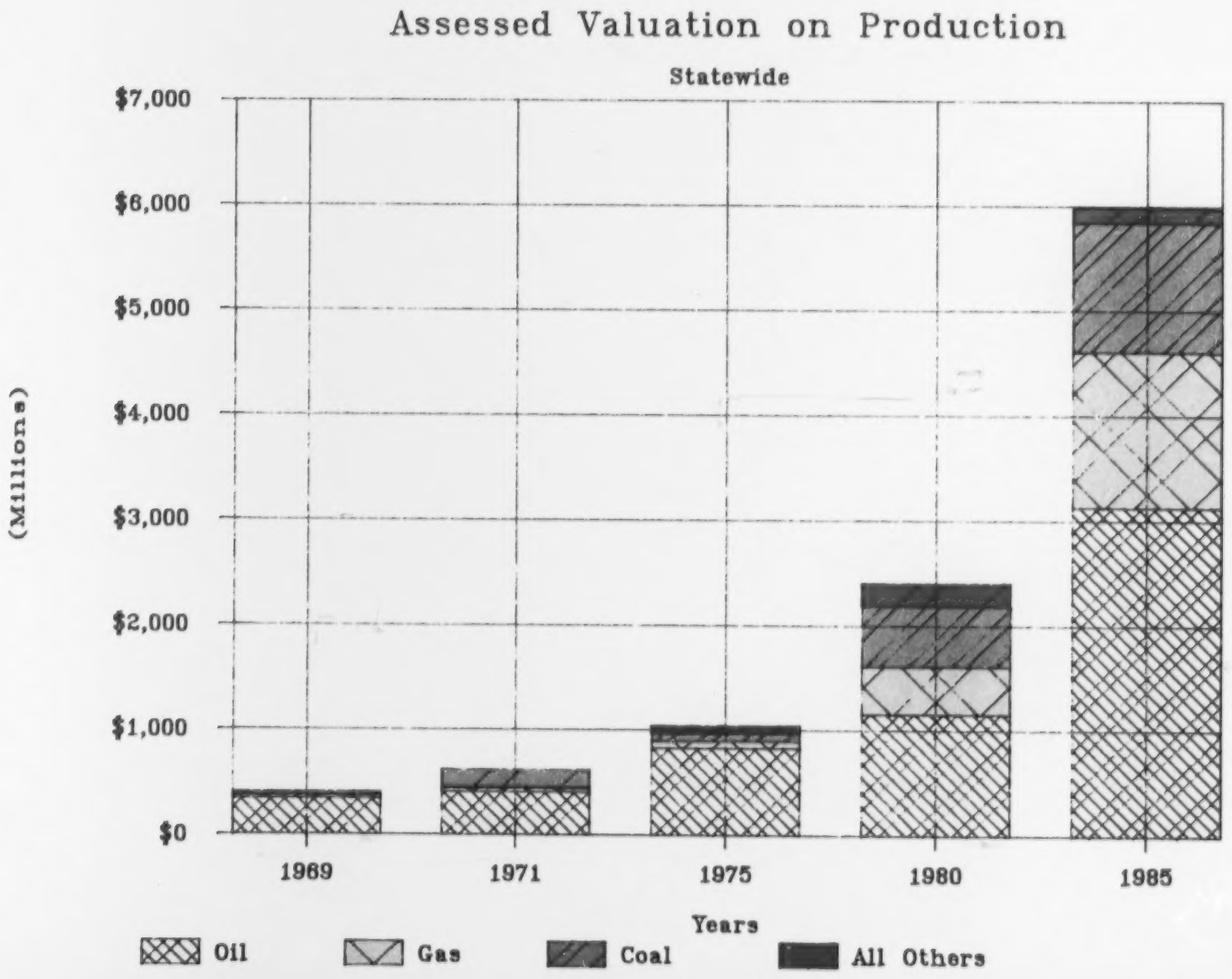
Minerals Division
Economic Development and Stabilization Board
Herschler Bldg., 3rd Floor
Cheyenne, Wyoming 82002

*These figures are from the Oil and Gas Conservation Commission, rather than Ad Valorem Tax Division, due to the change in reporting requirements adopted by the 1980 Legislature.

Total 1986 Assessed Mineral Valuation

Total Valuation = $5,531,843,307




Assessed Valuation on Production
Statewide
$7,000
$6,000
$5,000
$4,000
$3,000
$2,000
$1,000
$0
(Millions)
1969
1971
1975
1980
1985
Years
Oil
Gas
Coal
All Others

WYOMING MINERAL INDUSTRY

TAX TABLES

The ten tables in this section illustrate the tax situation for the Wyoming Minerals Industry since 1969. The significance of 1969 is that was the year the severance tax on minerals was initiated.

Tables are as follows:

I Assessed Valuation on Production, 1969 - 1986.

II Ad Valorem Tax Paid on Production, 1969 - 1986.

III Assessed Valuation Per Unit of Production, 1969 - 1986.

IV Severance Tax Collections, 1969 - 1986.

V Severance Tax Rates, 1969 - 1986.

VI Severance Tax Distribution, 1985.

VII Sales and Use Tax - Fiscal Year.

VIII Government Royalty.

IX Summary Table.

X Mineral Income to the State, 1971 - 1986.

TABLE I

ASSESSED VALUATION ON PRODUCTION[1]
(In dollars)

	1969	1970	1971	1972	1973	1974	1975	1976	1977
Oil	342,095,561	393,521,962	408,316,110	410,960,436	386,433,220	484,677,222	833,099,266	894,047,178	871,638,686
Oil (Stripper)									54,635,836
Gas	32,568,891	35,896,344	38,876,833	42,917,421	45,799,719	56,303,866	65,041,856	88,861,898	132,925,715
Coal	5,158,890	6,604,717	12,823,567	15,230,522	20,220,230	36,525,380	70,658,473	124,656,316	182,641,777
Uranium	11,973,833	12,887,471	17,793,920	18,584,904	26,734,686	24,469,735	19,519,275	20,829,685	41,830,148
Trona	7,206,779	10,792,192	14,830,637	14,616,185	17,127,262	22,793,340	33,537,931	44,278,752	61,604,249
Others	8,435,480	10,435,621	128,127,781	13,341,962	15,654,176	18,231,793	23,009,044	26,252,467	29,872,572
Totals	407,439,434	470,138,307	505,453,848	515,651,430	511,969,293	643,001,336	1,044,865,845	1,198,926,296	1,375,149,102

	1978	1979	1980	1981	1982	1983	1984	1985	1986
Oil	933,988,779	1,030,279,506	1,156,955,262	2,113,492,444	3,399,464,789	2,980,583,636	2,788,082,073	2,926,290,488	2,687,685,876
Oil (Stripper)	62,166,335	69,151,578	128,228,914	206,202,114	206,223,009	201,804,826	198,338,861	201,873,856	201,675,444
Gas	223,675,393	264,389,250	456,131,295	671,087,378	978,407,639	1,132,051,442	1,258,272,277	1,484,730,803	1,238,247,618
Coal	299,778,223	408,906,655	572,648,542	773,633,734	989,695,692	1,113,645,140	1,151,048,135	1,230,917,455	1,256,360,635
Uranium	66,240,921	73,196,538	69,290,431	80,981,002	77,239,481	45,555,994	50,837,054	21,750,901	16,916,156
Trona	78,660,136	79,793,896	108,890,862	138,925,498	147,417,617	121,583,686	104,500,003	95,792,777	95,839,980
Others	33,404,356	35,025,749	41,893,010	41,828,458	49,758,099	29,578,806	26,707,789	26,270,866	17,196,174
Totals	1,697,914,143	1,960,744,172	2,543,038,316	4,026,165,628	5,852,764,024	5,624,803,530	5,577,786,192	5,987,627,146	5,514,921,883

[1]Assessed Valuation is on the previous year's production.

Source: Department of Revenue and Taxation,
Ad Valorem Tax Division.

Prepared by: Economic Development and Stabilization Board
Mineral Development Division
November 1986

TABLE II

AD VALOREM TAX PAID ON PRODUCTION[1]
(In dollars)

	1969	1970	1971	1972	1973	1974	1975	1976	1977
Oil	18,630,403	21,250,757	22,497,626	22,745,100	21,647,269	27,428,035	44,062,703	52,011,268	53,242,493
Oil (Stripper)									3,337,395
Gas	1,818,047	2,026,025	2,231,793	2,479,267	2,735,809	3,361,474	3,791,780	5,416,016	8,363,221
Coal	278,203	347,724	781,847	933,916	1,125,772	2,018,242	3,991,473	7,321,256	11,216,632
Uranium	745,436	800,216	1,113,915	1,139,758	1,594,162	1,441,087	1,181,988	1,268,260	2,661,655
Trona	439,181	627,674	925,135	913,663	1,186,837	1,580,954	2,390,070	2,089,771	4,239,604
Others	496,108	615,480	772,514	832,974	975,059	1,122,396	1,363,208	1,648,239	1,919,772
Totals	22,407,378	25,667,876	28,272,830	29,044,678	29,264,908	36,952,188	56,781,222	70,754,810	84,981,772

	1978	1979	1980	1981	1982	1983	1984	1985	1986
Oil	57,655,255	65,640,994	73,114,675	141,067,719	208,758,682	200,728,469	185,908,225	189,946,540	171,648,252
Oil (Stripper)	3,837,536	4,405,838	8,103,525	N/A	12,664,006	13,590,618	13,225,167	13,103,632	12,879,942
Gas	14,157,450	16,951,670	29,195,909	42,834,889	62,548,833	75,104,760	83,480,988	98,634,245	86,586,112
Coal	18,962,219	25,551,858	37,216,429	48,882,281	65,921,399	76,171,728	77,605,647	80,239,656	78,515,051
Uranium	4,322,847	4,948,183	4,599,360	5,407,377	4,881,942	2,931,559	3,313,587	1,348,692	1,142,136
Trona	5,898,724	5,698,082	7,783,519	10,095,716	10,416,529	8,721,198	7,630,590	7,186,374	8,080,328
Others	2,145,881	3,212,339	2,712,807	2,885,474	3,154,581	1,991,685	1,794,882	3,345,662	3,333,096
Totals	106,979,912	126,408,964	162,726,224	251,173,456	368,345,972	379,240,017	372,959,086	393,652,409	362,184,917

[1]Taxes are paid on previous year's production.

Sources: Department of Revenue and Taxation,
Ad Valorem Tax Division.

Petroleum Association of Wyoming.

Prepared by: Economic Development and Stabilization Board
Mineral Development Division

November 1986

TABLE III

ASSESSED VALUATION PER UNIT OF PRODUCTION
(In dollars)

	1969	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
Oil (bbl.)	2.63	2.80	2.88	3.10	3.09	3.82	6.71	7.41	7.51	7.81	8.74
Oil (stripper)[1]									(11.85)	(13.01)	(13.89)
Gas (mcf)	.15	.15	.15	.15	.16	.20	.24	.36	.51	.82	.97
Coal (ton)	1.40	1.50	1.82	1.97	2.01	2.56	3.54	5.39	6.03	6.73	7.24
Uranium (ton)	6.05	7.90	8.72	9.09	11.18	9.46	8.53	7.61	12.66	16.62	13.27
Trona (ton)	2.28	2.91	3.69	3.48	3.50	3.78	4.74	6.00	7.00	7.70	8.00

	1980	1981	1982	1983	1984	1985	1986	17 Year Increase $	15 Year Increase %	Factor of Increase Since 1969
Oil (bbl.)	10.50	20.32	32.26	29.45	26.91	26.56	23.33	20.83	792	8.93
Oil (stripper)[1]	(23.53)	N/A	(34.94)	(31.60)	(29.19)	28.41	25.26	-	1906	20.06
Gas (mcf)	1.37	1.92	2.77	3.22	3.19	3.32	3.01	2.86	-	-
Coal (ton)	8.32	8.55	10.06	10.71	10.67	9.64	9.30	7.90	564	6.64
Uranium (ton)	12.57	15.13	16.89	21.69	16.67	13.31	30.96	24.91	411	5.11
Trona (ton)	9.25	11.43	12.51	12.07	9.91	8.73	8.94	6.66	292	3.92

[1]Stripper wells (10 bbls. per day or less) pay 4%.

Sources: Department of Revenue and Taxation,
Ad Valorem Tax Division.
Petroleum Association of Wyoming

Prepared by: Economic Development and Stabilization Board
Mineral Development Division
November 1986

TABLE IV

SEVERANCE TAX COLLECTIONS[1,2]
(In dollars)

	1969	1970	1971	1972	1973	1974	1975	1976	1977
Oil	3,436,531	3,934,661	4,087,588	4,129,909	3,865,315	14,427,959	32,689,133	34,781,276	35,958,264
Gas	323,794	357,047	388,585	412,267	457,930	1,504,043	2,604,405	3,554,476	5,317,029
Coal	51,592	63,778	128,199	159,272	202,202	1,095,230	2,862,339	4,986,253	17,716,252
Uranium	119,739	128,838	178,136	186,021	267,347	244,697	390,395	416,594	2,300,658
Trona	72,068	107,922	148,306	146,162	171,273	683,800	1,341,517	1,771,150	3,388,234
Others	84,355	104,362	117,948	137,782	157,241	182,852	463,772	527,052	597,454
Totals	4,088,079	4,696,608	5,048,762	5,171,413	5,121,308	18,138,581	40,315,561	46,034,800	65,277,891

	1978	1979	1980	1981	1982	1983	1984	1985	1986*
Oil	38,602,878	42,594,321	48,842,788	212,216,807	186,209,348	173,159,464	183,652,383	169,328,171	47,595,538
Gas	8,947,016	10,575,570	18,245,252	58,704,458	71,149,850	77,010,279	89,283,848	74,294,857	28,814,736
Coal	30,277,601	42,333,199	60,128,097	103,918,048	116,873,160	121,635,765	128,444,924	130,810,704	56,778,883
Uranium	3,643,251	4,025,810	3,810,974	4,248,171	2,426,365	2,838,661	1,196,300	930,389	256,754
Trona	4,326,307	4,388,664	5,988,997	8,107,969	6,780,896	6,312,251	5,258,603	5,326,199	2,820,224
Others	668,087	700,515	837,859	995,164	740,484	461,613	325,418	343,925	182,401
Totals	86,465,140	105,219,989	137,853,967	388,190,617	384,180,103	381,418,027	408,171,476	381,034,245	136,448,536

[1]Severance Tax is paid on previous year's production.

[2]Severance Tax will be paid quarterly starting in 1981.

*First two quarters of 1986.

Source: Department of Revenue and Taxation,
Ad Valorem Tax Division,
Petroleum Association of Wyoming.

Prepared by: Economic Development and Stabilization Board
Mineral Development Division
November 1986

TABLE V

SEVERANCE TAX RATES

	1969	1970	1971	1972	1973	1974	1975	1976	1977
Oil	10 Mills (1%)	1.0%	1.0%	1.0%	1.0%	3.0%	4.0%	4.0%	4.0%
Gas	10 Mills (1%)	1.0%	1.0%	1.0%	1.0%	3.0%	4.0%	4.0%	4.0%
Coal	10 Mills (1%)	1.0%	1.0%	1.0%	1.0%	3.0%	4.4%	4.8%	9.7%
Uranium	10 Mills (1%)	1.0%	1.0%	1.0%	1.0%	2.0%	2.0%	2.0%	5.5%
Trona	10 Mills (1%)	1.0%	1.0%	1.0%	1.0%	3.0%	4.0%	4.0%	5.5%
Others	10 Mills (1%)	1.0%	1.0%	1.0%	1.0%	2.0%	2.0%	2.0%	2.0%

	1978	1979	1980	1981	1982	1983	1984	1985	1986
Oil	4.0%	4.0%	4.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Gas	4.0%	4.0%	4.0%	6.0%	6.0%	6.0%	6.0%	6.0%	6.0%
Coal	10.1%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5%	10.5% (surface) 7.25% (underground)*	10.5% (surface) 7.25% (underground)*
Uranium	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Trona	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%	5.5%
Others	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%	2.0%

*Change made by 1984 Legislature

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Mineral Development Division
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TABLE VI

SEVERANCE TAX DISTRIBUTION (1985)

Proceeds To	Coal*	Trona	Uranium	Oil*	Gas	Other
Permanent Wyoming Mineral Trust Fund	2.5%	2.0%	2.0%	2.167%	2.167%	
General Fund	2.0%	2.0%	2.0%	2.000%	2.000%	2.0%
Wyoming Water Development Account	1.5%			.167%	.167%	
Highway Fund	1.0%	0.9%	0.9%	.666%	.666%	
Capital Facilities Revenue Account	1.5%	0.6%	0.6%			
Coal Impact Tax	2.0%					
Counties				.250%	.250%	
Cities and Towns				.750%	.750%	
Total	10.5%	5.5%	5.5%	6.000%	6.000%	2.0%

*Stripper Oil is 4.0%.
*Underground coal is 7.25%

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November 1986

TABLE VII

SALES AND USE TAX (FISCAL YEAR)
(In dollars)

		1971	1972	1973	1974	1975	1976	1977	1978
Oil and	Sales	866,859	857,224	1,115,123	1,724,261	3,224,274	4,082,391	4,837,746	6,803,898
Natural Gas	Use	75,794	102,405	147,793	228,076	428,594	380,383	494,689	663,220
Coal	Sales	6,162	8,060	8,830	14,006	84,439	78,312	238,357	318,052
	Use	47,956	181,463	216,691	135,461	680,171	661,775	1,441,992	1,451,495
Metal Mining	Sales	8,522	8,837	10,961	9,763	83,042	149,608	187,762	191,480
	Use	142,472	107,287	89,826	94,839	358,945	670,004	868,173	1,171,804
Other Mining	Sales	98,180	86,481	115,294	270,561	405,655	429,123	459,592	734,697
	Use	187,333	312,709	462,320	865,722	895,296	727,911	1,425,173	1,330,654
Totals	Sales	979,723	960,602	1,250,208	2,018,591	3,797,410	4,739,434	5,723,457	8,075,098
	Use	453,555	703,864	916,630	1,324,098	2,363,006	2,440,073	4,230,027	4,850,379
	Both	1,433,278	1,664,466	2,166,838	3,342,689	6,160,416	7,179,507	9,953,484	12,925,477

		1979	1980	1981	1982	1983	1984	1985	1986
Oil and	Sales	8,581,968	12,348,619	16,079,610	22,035,697	15,218,668	13,361,873	11,207,576	9,845,347
Natural Gas	Use	1,270,079	1,659,281	2,037,239	7,313,596	3,523,801	3,205,904	3,289,737	17,220,121
Coal	Sales	463,133	519,766	841,075	734,329	559,876	504,977	859,055	1,163,794
	Use	2,327,323	1,177,761	930,267	2,747,266	3,351,329	4,620,216	5,233,499	3,132,693
Metal Mining	Sales	573,470	191,266	152,566	244,464	262,155	3,737	53,381	240,414
	Use	1,218,530	957,484	566,053	325,782	179,114	223,504	49,259	448,884
Other Mining	Sales	1,231,801	1,561,663	2,135,082	2,801,968	1,816,543	1,220,018	1,052,177	964,348
	Use	1,415,269	1,705,501	2,035,418	1,829,396	1,940,381	1,201,420	1,014,330	1,088,222
Totals	Sales	10,850,372	14,621,314	19,208,333	25,816,458	17,857,242	15,090,605	13,172,189	12,213,903
	Use	5,231,201	5,500,027	5,568,977	12,216,040	8,994,625	9,251,044	9,586,825	21,889,920
	Both	16,081,573	20,121,341	24,777,310	38,032,498	26,851,867	24,341,649	22,759,014	34,103,823

Source: Department of Revenue and Taxation

Prepared by: Economic Development and Stabilization Board
Mineral Development Division
November 1986

TABLE VIII

GOVERNMENT ROYALTY (MINERAL ROYALTY RETURNS TO STATE)
(In dollars)

1970	1971	1972	1973	1974	1975	1976	1977	1978
18,624,702	21,085,849	19,855,029	19,412,665	33,392,197	34,450,233	49,433,822	58,971,484	69,763,079

1979	1980	1981	1982	1983	1984	1985	1986
76,523,544	95,100,847	115,062,289	119,955,519	152,195,146	165,092,468*	221,650,911**	188,467,235

Prior to 7/1/76 the State received 37½% of the Federal Mineral Royalties, after 7/1/76 the State received 50%.

These funds are distributed by W. S. Section 9-4-601 as follows:

Foundation Program	Highway Commission	University of Wyoming	Highway Commission for Counties	Incorporated Cities & Towns	Capitol Construction Cities, Towns, Special Districts	Capitol Construction Schools, Community Colleges and State
34 1/2%	26 1/4%	6 3/4%	2 1/4%	7 1/2%	7 1/2%	15 1/4%

Source: State Treasurer.

Prepared by: Economic Development and Stabilization Board
Mineral Development Division
November 1986

*The percentages above reflect the changes made by the 1984 legislature.
**Amount is inflated due to carry over when reporting changed to quarterly rather than fiscally.

TABLE IX

SUMMARY TABLE

	ASSESSED VALUATION PER UNIT				SEVERANCE TAX				AVERAGE TAX LEVY (MILLS)		TAX AS A PERCENTAGE OF VALUATION-MILL LEVY PLUS SEVERANCE	
	1969	1986	Percent of Increase	Factor of Increase	1969	1986	Percent of Increase	Factor of Increase	1969	1986	1969	1985
Oil	$2.63	$23.46	792%	8.93	1.0%	6.0%	500%	6.0	54.4	63.86	6.44%	12.38%
Gas	.15	3.01	1906	20.06	1.0	6.0	500	6.0	55.8	69.92	6.58	12.69
Coal	1.40	9.30	564	6.64	1.0	10.5	950	10.5	53.9	64.23	6.39	16.92
Uranium	6.05	30.96	411	5.11	1.0	5.5	450	5.5	62.2	67.51	7.22	12.25
Trona	2.28	8.94	292	3.92	1.0	5.5	450	5.5	60.9	83.44	7.09	13.84

	AVERAGE TAX PAID PER UNIT		INCREASE PER UNIT THROUGH 1986	PERCENTAGE OF INCREASE PER UNIT THROUGH 1986	FACTOR OF INCREASE PER UNIT THROUGH 1986
	1969	1986			
Oil	$0.169	$1.62	$1.45	858%	9.58
Gas	0.009	0.39	.38	4222%	43.22
Coal	0.089	1.54	1.45	1629%	12.29
Uranium	0.437	3.24	2.80	641%	7.41
Trona	0.183	1.24	1.16	634%	7.34

Prepared by: Economic Development and Stabilization Board
Mineral Development Division
November 1986

TABLE X
MINERAL INCOME TO THE STATE OF WYOMING 1971 - 1986[2]
(In dollars per calendar year)

Source	1971	1972	1973	1974	1975	1976	1977	1978
Ad Valorem	28,272,830	29,044,678	29,264,908	36,952,188	56,781,222	70,754,810	84,981,772	106,979,912
Severance	5,048,761	5,171,411	5,121,307	18,138,581	40,315,561	46,034,800	65,277,891	86,465,140
Sales and Use[1]	1,433,276	1,644,466	2,166,838	3,342,689	6,160,415	7,179,457	9,953,382	12,925,477
U.S. Rent and Royalty Returns*	21,085,848	19,855,028	19,412,664	33,392,196	34,450,233	49,433,821	58,971,484	69,763,078
State Rent	2,533,127	2,548,206	2,690,933	3,030,133	3,648,785	3,372,336	3,532,586	3,946,697
State Royalties	5,157,428	5,008,511	4,613,961	9,429,243	10,413,284	12,160,309	15,254,011	15,560,977
General Fund Income (filing fees, etc.)	345,808	828,585	893,839	1,294,785	2,143,956	2,828,505	4,032,739	6,433,216
Total	63,877,078	64,120,885	64,164,450	105,579,815	153,913,456	191,764,035	240,903,865	302,074,497

	1979	1980	1981	1982	1983	1984	1985	1986
Ad Valorem	126,408,964	162,726,224	251,173,456	368,345,972	379,240,017	372,959,086	393,652,409	362,184,917
Severance	105,219,989	137,853,969	388,190,167	384,180,103	381,418,027	408,171,476	381,034,245	136,448,336[2]
Sales and Use[1]	18,987,778	20,121,341	24,777,310	38,032,499	26,851,867	24,341,649	22,759,014	34,103,823
U.S. Rent and Royalty Returns*	76,523,544	95,100,847	115,062,289	119,955,519	152,195,146	165,092,468	221,650,911	188,467,235
State Rent	3,504,505	4,716,653	5,487,607	6,358,149	6,547,641	5,649,863	12,261,674	6,713,567
State Royalties	16,248,479	30,814,994	51,011,313	62,113,790	64,615,059	56,726,182	59,142,728	54,222,959
General Fund Income (filing fees, etc.)	6,408,160	7,608,030	9,143,841	15,350,121	13,240,427	10,976,503	3,716,017	2,052,011
Total	353,301,419	458,942,058	646,5[illegible],667	994,336,153	1,024,108,184	1,093,917,227	1,093,889,998	781,143,048

*Prior to 7/1/76 the State received 37.5% of the Federal Mineral Royalties; after 7/1/76 the State received 50%.
Prepared by: The Geological Survey of Wyoming.
Sources: Economic Development and Stabilization Board, Department of Revenue and Taxation, State Land Commission, and State Treasurer. November 1986

[1]This only includes Metal Mining, Coal Mining, Miscellaneous Mining and Oil and Gas.

[2]Severance Tax Collections are for the first two quarters of 1986 only.

WYOMING MINERAL COMMODITIES REVIEW

1986

BENTONITE

Bentonite is a clay mineral which is the result of the alteration of volcanic ash. Wyoming bentonite originated from volcanic ash ejected in western Wyoming and Idaho during the late Cretaceous period about 120,000,000 years ago. Prevailing westerly winds blew the ash eastward and deposited it in the areas now occupied by bentonite deposits. Wyoming bentonite occurs in the Big Horn Basin, the southern Powder River Basin, and along the western edge of the Black Hills in the northeastern corner of the state.

Bentonite is a clay mineral composed of microscopic platelets consisting of layers of aluminum hydroxide held between layers of silicate atoms. These platelets are stacked one on top of the other. Water can penetrate between layers of platelets, causing the entire structure to swell. Wyoming bentonite has sodium atoms interspersed between these layers of platelets at intervals. Other types of bentonite have calcium between the platelet layers. Sodium bentonite has greatly increased swelling characteristics. Wyoming sodium bentonite, when wet, increases as much as fifteen times its original volume.

Bentonite was used by area Indians as a bleaching clay and washing agent before the white man ventured into what is now Wyoming. Bentonite bogs or "soap holes" caused the loss of some cattle to pioneers, but it was utilized as an emergency substitute for axle grease, as a curative pack for inflamed horses' hoofs and as waterproofing for the roofs of dwellings.

Bentonite was originally named taylorite for William Taylor of Rock Creek, who first made commercial shipments of the clay in 1888. Dr. S. H. "Sam" Knight, State Geologist of Wyoming, renamed the clay bentonite when he learned that taylorite had previously been used in England as the name for

another mineral. The term bentonite comes from the Fort Benton shale member of the Mowry formation, where the mineral occurs.

The first sales of Wyoming bentonite were to eastern plants for use in the manufacture of cosmetics. Production remained at a low level until the 1920's, when bentonite's usefulness as a binding agent in foundry sand and as an additive to oil well drilling mud were first discovered.

The U. S. Bureau of Mines economic mineral publications first separated bentonite from "other clays" in 1931. The Wyoming Ad Valorem Tax Division has maintained separate bentonite production statistics since 1927.

The first bentonite mill in Wyoming was constructed at Cheyenne in 1920. The bentonite used in this plant was mined near Medicine Bow. The first mills near the Black Hills, in the northeastern part of the state, were constructed at Newcastle, Osage, and Upton in 1926. Production began in the northern Black Hills near Belle Fourche in the late 1930's. Later, other high grade deposits were discovered in the Big Horn Basin and the Kaycee area of the Power River Basin.

There are seven companies presently involved in the Wyoming bentonite industry:

1. Kaycee Bentonite in the Powder River Basin.
2. The Baroid Division of N. L. Industries, Federal Ore and Chemical, International Minerals and Chemical, and American Colloid near the Black Hills.
3. Dresser Magcobar Minerals, the Baroid Division of N. L. Industries, Wyo-Ben, American Colloid, and Kaycee Bentonite in the Big Horn Basin.

Wyoming bentonite production has risen from 1,141 tons in 1927 to 2,588,229 tons in 1985. The accompanying table shows historical Wyoming bentonite production.

Estimates of remaining Wyoming bentonite reserves vary widely. A report of the American Institute of Mining Engineers gives a figure of 1,149,000,000 tons of in-place reserves, while the 1980 edition of the U. S. Bureau of Mines Minerals Facts and Problems lists reserves of 200,000,000 tons.

Bentonite deposits either crop out at the surface or are buried shallowly, so mining operations consist of removing any overburden present and loading the bentonite into trucks for transport to a mill. Due to shallow burial and the loose unconsolidated nature of the surrounding sediments, no underground mining of bentonite has been attempted. When the bentonite arrives at the mill, it is segregated into piles according to physical characteristics. Materials from these piles are blended to obtain a product with the desired characteristics.

In the mill, the bentonite is first broken into small chunks, screened, and conveyed through a dryer. Temperature of the dryer is critical since temperatures that are too high can destroy the desired properties of the bentonite. Natural gas has been the fuel used in the dryers, but coal and some air drying are now utilized in several operations.

Drying removes about 25% of the moisture in the bentonite. After drying, the clay is pulverized to a variety of size ranges. After sizing, bentonite is either packed in 50, 75, or 100 pound bags or bulk shipped in covered railroad cars.

Currently the single largest market for bentonite is the oil and gas industry, which uses bentonite as a drilling mud additive. Fifty percent of Wyoming bentonite is used in drilling muds. Bentonite's colloidal properties allow heavy well cuttings to be suspended, helps lubricate drilling equipment, cakes the sides of the drill hole to prevent caving, and prevents seeping of

ground water into the hole and drilling fluids out of it into surrounding rocks.

The foundry industry consumes 20% of the state's bentonite. Bentonite is used as a molding sand binder. The clay's superior binding properties allow the sand to be formed into shapes that will not fracture or disintegrate during molding operations.

Iron ore pelletizing has used 20% of the bentonite produced. However, it appears that an organic binder may takeover this application.

The remaining 10% is used in a myriad of applications, a sampling of which are: animal feed, ceramics, water softening, cement manufacture, laxatives, crayons, paint, insecticide, reservoir liner, and medicines.

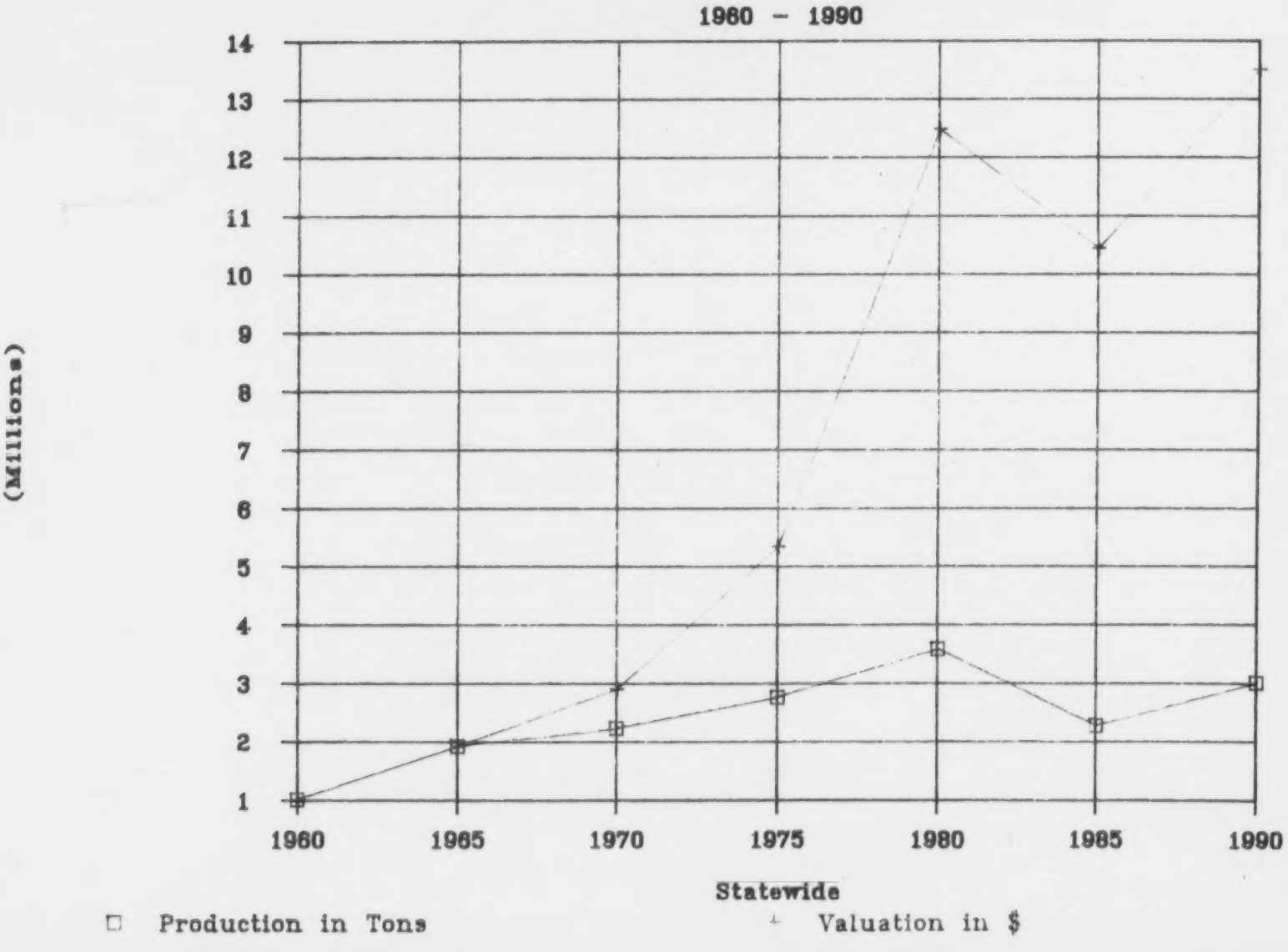
The Wyoming bentonite industry is facing a decline in markets due to a reduction in oil well drilling, the slump of the automobile industry, loss of the iron ore pelletizing application, and sluggish construction activity. Long range prospects are favorable, but bentonite production will probably flucuate in the near term.

HISTORICAL BENTONITE PRODUCTION

Year	Net Tons	Year	Net Tons
1921 - 1926	Lumped with "other clay"	1956	1,215,943
1927	1,141	1957	1,073,119
1928	11,097	1958	648,404
1929	23,369	1959	1,146,001
1930	25,900	1960	1,096,850
1931	14,307	1961	1,008,756
1932	11,906	1962	1,165,538
1933	21,652	1963	1,398,106
1934	27,177	1964	1,578,528
1935	40,154	1965	1,923,319
1936	36,926	1966	2,081,352
1937	61,686	1967	1,801,966
1938	65,289	1968	2,118,871
1939	77,481	1969	2,373,253
1940	70,265	1970	2,228,978
1941	182,719	1971	1,813,066
1942	201,424	1972	2,062,384
1943	273,095	1973	2,614,779
1944	347,048	1974	3,422,675
1945	535,675	1975	2,760,871
1946	324,886	1976	3,278,765
1947	617,940	1977	3,315,783
1948	713,802	1978	3,626,652
1949	607,767	1979	4,479,242
1950	543,274	1980	3,584,713
1951	926,850	1981	4,805,005
1952	926,850	1982	2,345,914
1953	949,566	1983	2,183,865
1954	928,837	1984	3,083,324
1955	886,092	1985	2,588,229
		Cumulative Total	78,279,236

Source: Wyoming Department of Revenue and Taxation (net taxable tons)

Bentonite Production and Valuation



COAL

Coal results from the burial and compression of large amounts of vegetation. Increasing depth of burial results in the addition of heat which alters the original vegetation physically and chemically.

Wyoming's coal deposits accumulated during two geologic periods, the later Cretaceous and Early Tertiary, between 75 and 45 million years ago.

During late Cretaceous time, Wyoming was a low land area, periodically covered by a shallow sea which advanced and retreated from east to west. When the sea retreated, low lying coastal swamps developed where extensive vegetation grew, died and accumulated on the swamp bottoms. When the sea re-advanced, the plant material was buried by silts and clays. This cycle was repeated many times, with the earlier deposited material being buried deeper and deeper and ultimately being converted into coal by heat and pressure. Wyoming's Cretaceous coals are commonly thin, seldom exceeding 10 feet in thickness.

Conditions were different in early Tertiary Time, when the other sequence of Wyoming coals developed. The sea had disappeared, and various ranges of the Rocky Mountains had risen. A number of basins developed between these ranges, and large amounts of vegetation accumulated in these basins. These Tertiary coals are typically much thicker then the earlier deposits, with beds of 30 to 100 feet common, and a maximum known thickness of over 200 feet.

Coals are ranked according to composition and heating value. Peat, which consists of lightly compressed dried vegetation, is not considered a coal, although it is used as a fuel in Ireland and northern England. The ranks of coal are as follows:

Name	Amount of Carbon	BTU Content	Volatiles	Moisture
Anthracite	86 - 98%	16,000 - 20,000	5%	0%
Bituminous	55 - 85%	11,000 - 16,000	25%	20%
Subbituminous	30 - 55%	8,300 - 11,000	40%	30%
Lignite	10 - 30%	4,000 - 8,300	50%	40%

These ranks are divided into smaller categories in detailed classifications. Wyoming's coal is subbituminous in grade. It contains more moisture and less sulphur than many equivalent coals from the east and midwest.

The first written account of coal in Wyoming was made in 1843 by Captain John C. Fremont, "The Pathfinder". He referred to the appearance of coal in what was probably Cumberland Gap, near Kemmerer.

Captain John R. Stansbury, U. S. Army Corp of Engineers, reported seeing large outcrops of coal near Rock Springs and at Point of Rocks, twenty-five miles east of Rock Springs, in 1852.

The first use of Wyoming coal was made by the Army to heat winter quarters and in stage line forges in the mid-1800's.

The Union Pacific Railroad began prospecting for coal along its line in Wyoming in 1867, and the first coal mined by the railroad was 650 tons taken at the now abandoned Town of Carbon in 1868.

In 1908, forty years after the first production, coal mining was the leading industry in Wyoming, with a production of over six million tons, one-third of it from the Rock Springs area.

The Kemmerer Coal Company opened mines near Kemmerer about the turn of the century, and Kemmerer Coal is still operating at the present time, the longest continuous operation in the state.

Production increased up to 1947, when eight million tons were produced in

the state, mostly from mines in the Hanna, Rock Springs, and Sheridan areas.

It was at this point that the railroads began the change from steam to diesel locomotives, and as demand for railroad coal decreased, Wyoming production followed it downward. The bottom was reached in 1959 when the state produced less than two million tons.

Beginning in the mid-1960's, interest in Wyoming coal, as a fuel for thermal electric generation plants, began to increase. This interest was sparked primarily by two factors, physical properties of the coal, and its cost. The physical property of Wyoming coal, which made it attractive to power plant operators, was its low sulphur content, which ranges between 0.5 and 1.5 percent sulphur. This constrasts with eastern coals which range from 5 to 9 percent sulphur. The ability to burn Wyoming coal without installation of expensive exhaust gas scrubbers more than compensated for other detrimental properties, namely low heat value and high water content.

Because virtually all Wyoming coal was strip mined, its cost of production was much less than deep mined eastern coal. In addition, large machinery and the latest technology greatly increased worker productivity, which lowered the price further.

At present, there are twenty-eight active Wyoming coal mines; twenty-seven surface and one underground. These mines are concentrated in only a few areas: the Hams Fork Coal Region in Lincoln County; the Rock Springs Coal Region in Sweetwater County; the Hanna Coal Field in Carbon County; the Powder River Coal Region in Converse, Campbell, and Sheridan Counties; and one mine in the Big Horn Coal Field of Hot Springs County.

The Powder River Basin accounts for 85% of Wyoming's production and boasts the three biggest surface coal mines in the nation: Amax's Belle Ayre

and Jacob's Ranch Mines and Atlantic Richfield's Black Thunder Mine. Information on individual mines is available from the State Geological Survey in Laramie or the Minerals Division of EDSB.

Wyoming coal production has increased over 17 fold since 1971 under the impetus of power plant demand. The history of Wyoming coal production is given on the accompanying table.

The future of the Wyoming coal industry is uncertain. Several factors mitigate against Wyoming coal:

1. With the requirement of SO_2 scrubbers on all power plant smoke stacks, regardless of the sulphur content of the coal being burned, eastern and mid-western utilities are leaning toward local, higher sulphur, higher BTU coal to fuel their boilers.

2. Freight rates have reached the point where it costs up to three times as much to transport the coal as the cost of the coal itself. Under these circumstances, local coal becomes much more attractive.

3. The virtual disappearance of the Wyoming coal conversion industry has very much reduced projected in-state coal consumption.

4. Reduced electric power demand has resulted in the cancellation of generating units or entire power plants, significantly reducing potential customers.

Given these negative developments, Wyoming's coal industry is turning its attention toward new markets. One proposed new mine will emphasize the domestic market, an area of small relative demand but one which the existing large mines are not equipped to serve. The most attractive new outlet for Wyoming coal is the export market, primarily the so-called Pacific Rim nations of Japan, China, Taiwan, and the Philippines, along with Mexico.

Acid rain legislation requiring use of low sulphur coal in power plants would result in a large jump in demand for Wyoming coal.

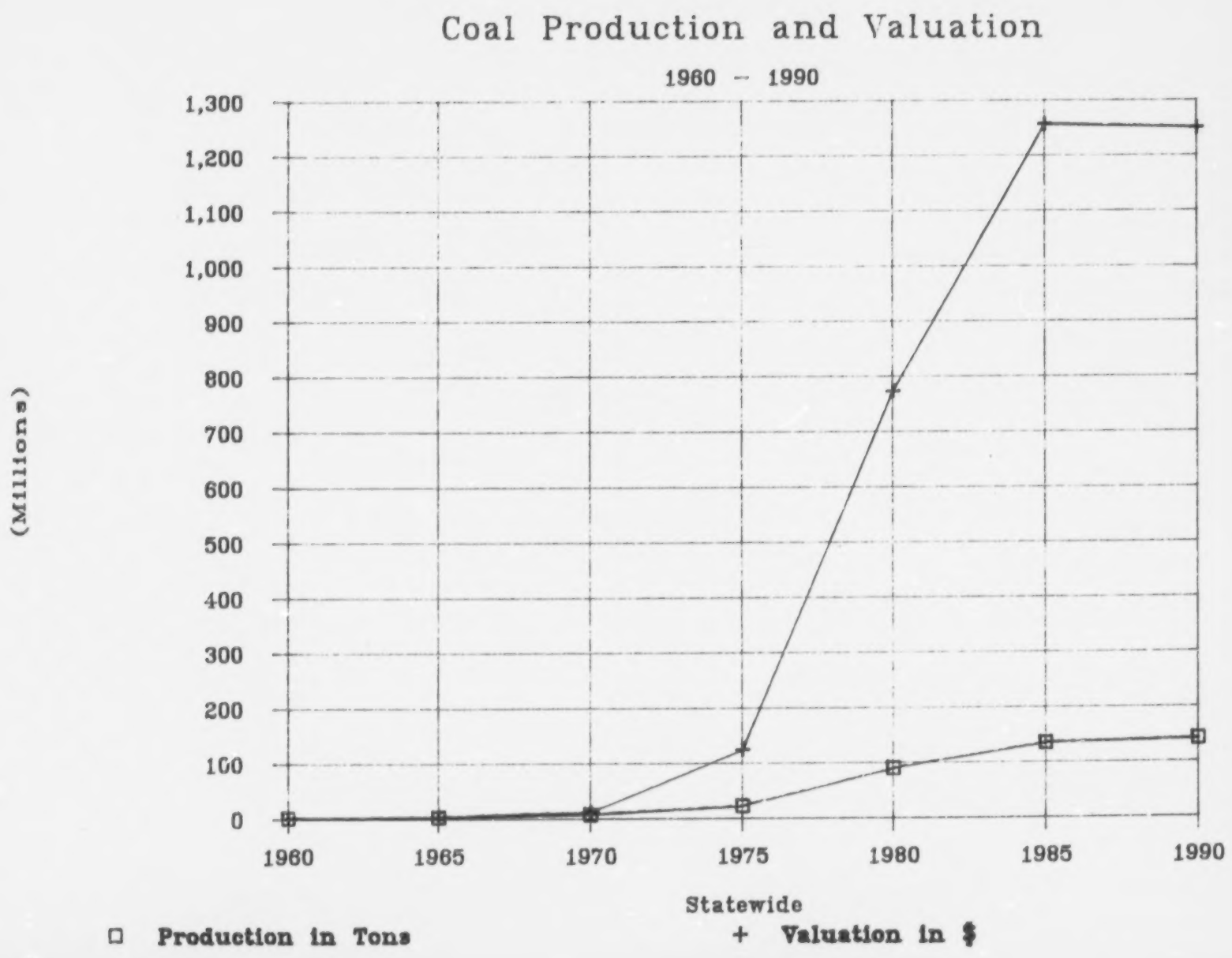
HISTORICAL COAL PRODUCTION

Year	Tons	Year	Tons
1865	800	1897	2,744,960
1866	2,500	1898	2,863,812
1867	5,000	1899	3,837,392
1868	6,925	1900	4,014,602
1869	58,186	1901	4,485,374
1870	105,295	1902	4,429,491
1871	147,328	1903	4,635,293
1872	221,745	1904	5,178,556
1873	259,700	1905	5,602,021
1874	219,061	1906	6,133,994
1875	300,808	1907	6,252,990
1876	334,550	1908	5,489,902
1877	342,853	1909	6,393,109
1878	233,200	1910	7,533,088
1879	400,991	1911	6,744,864
1880	527,811	1912	7,368,124
1881	628,181	1913	7,393,066
1882	707,764	1914	6,475,293
1883	779,689	1915	6,554,028
1884	902,620	1916	7,910,647
1885	807,328	1917	8,575,619
1886	835,999	1918	9,438,688
1887	1,170,318	1919	7,219,738
1888	1,512,936	1920	9,630,271
1889	1,388,947	1921	9,666,298
1890	1,870,366	1922	7,152,324
1891	2,327,841	1923	5,990,984
1892	2,503,839	1924	7,557,923
1893	2,439,311	1925	6,758,379
1894	2,417,463	1926	6,563,179
1895	2,246,911	1927	6,513,534
1896	2,229,624	1928	6,548,902

Historical Coal Production - cont'd.

Year	Tons	Year	Tons
1929	6,666,162	1957	2,918,508
1930	6,049,282	1958	1,627,063
1931	4,992,138	1959	1,977,404
1932	4,146,814	1960	2,006,788
1933	3,979,387	1961	2,487,803
1934	4,355,791	1962	2,575,531
1935	5,184,215	1963	3,099,521
1936	5,868,972	1964	3,117,921
1937	5,903,825	1965	3,260,815
1938	5,179,074	1966	3,670,704
1939	5,387,621	1967	3,587,742
1940	5,824,926	1968	3,683,281
1941	6,664,748	1969	4,398,572
1942	8,144,972	1970	7,039,980
1943	9,202,155	1971	7,743,347
1944	9,561,545	1972	10,043,161
1945	9,879,857	1973	14,272,350
1946	7,623,968	1974	19,957,726
1947	8,038,648	1975	23,141,105
1948	6,413,602	1976	30,298,432
1949	5,981,958	1977	44,577,218
1950	6,257,416	1978	56,456,133
1951	6,310,824	1979	68,792,573
1952	6,088,338	1980	90,527,538
1953	5,247,442	1981	98,410,522
1954	2,832,636	1982	104,014,096
1955	2,921,607	1983	107,902,764
1956	2,555,456	1984	125,931,455
		1985	135,105,204
		Cumulative Total	1,381,480,971

Sources: Bureau of Mines (gross tons 1865 - 1921)
Wyoming Department of Revenue & Taxation (net tons 1921 - 1985)


Coal Production and Valuation
1960 - 1990
(Millions)
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
1960
1965
1970
1975
1980
1985
1990
Statewide
Production in Tons
Valuation in $

NATURAL GAS

Pure natural gas is composed of the simplest hydrocarbon, methane, CH_4. Natural gas, as it comes from the well, contains a number of different substances, including: ethane, propane, butane, and pentane (hydrocarbons), also carbon dioxide, helium, hydrogen, sulfide, and nitrogen.

Natural gas processing plants remove impurties in the gas and/or compress it to increase density in order to reach the heating standards of commercial gas. The materials removed from the gas by these plants are often valuable in themselves. Propane and butane are used as fuels, while ethane, pentane, and sulphur are utilized by the chemical industry. Hydrogen and helium are important industrial gases, while nitrogen, though often simply vented to the atmosphere, is being reinjected in secondary oil recovery in the Overthrust Belt. Carbon dioxide is also utilized in secondary oil recovery, as well as serving as an important refrigerant when in the liquid or solid form.

Natural gas occurs in three ways:

1. Free natural gas unassociated with crude oil.
2. Associated gas overlying and accompanying crude oil in the same reservoir.
3. Dissolved gas, which is gas in solution with the oil under reservoir conditions.

Pipeline quality natural gas has a heating value of about 1,000 calories per cubic foot. It burns with a bright flame, and the products of its combustion are carbon dioxide and water vapor. The high BTU output, plus the benign combustion products, make natural gas an excellent domestic fuel.

Wyoming has produced some natural gas since 1903, with early production coming from the Wind River and Big Horn Basins. Before 1918, Wyoming's

natural gas production was included with Utah and Colorado, not allowing an individual state breakdown.

The Overthrust Belt leads Wyoming's geologic provinces in natural gas production followed by the Green River Basin, The Wind River Basin, and The Powder River Basin. As the Riley Ridge project comes on line overthrust production will continue to increase.

Wyoming currently ranks seventh in natural gas reserves in the United States. The three leading states, Texas, Louisiana, and Alaska, alone, account for about three-fourths of the total reserves.

Wyoming is sixth in natural gas production behind Texas, Louisiana, Oklahoma, New Mexico, and Kansas, in that order.

Industrial, commercial, and domestic heating and a fuel for industrial processes have always been, virtually, the only markets for Wyoming natural gas.

The precipitous drop in oil prices have contributed to some decline in natural gas production, since much gas is produced as a consequence of oil drilling.

Since this country is self-sufficient in natural gas, the oil price drop has not had a similar effect on fallen gas prices, although they have come down from earlier levels.

The accompanying table shows historical Wyoming natural gas production.

HISTORICAL NATURAL GAS PRODUCTION

Year	Gross MCF	Net Taxable MCF
1918*	4,338,840	
1919	6,014,000	
1920	10,312,000	
1921	15,608,000	5,729,963
1922	23,427,000	10,628,238
1923	35,523,000	25,370,247
1924	46,036,000	37,674,875
1925	45,539,000	35,432,436
1926	46,567,000	35,933,311
1927	43,581,000	36,205,467
1928	47,490,000	41,474,389
1929	44,648,000	38,253,618
1930	43,219,000	36,116,642
1931	39,770,000	34,943,043
1932	28,938,000	32,825,682
1933	25,830,000	27,716,094
1934	23,148,000	27,437,123
1935	26,643,000	29,856,668
1936	29,322,000	33,241,655
1937	31,023,000	33,418,463
1938	38,400,000	32,655,704
1939	44,700,000	28,828,909
1940	40,000,000	34,606,554
1941	43,409,000	37,242,868
1942	46,471,000	39,657,890
1943	52,000,000	40,233,211
1944	51,000,000	42,761,950
1945	52,000,000	44,571,599
1946	49,700,000	41,479,104
1947	57,740,000	47,748,881
1948	79,280,000	51,103,206
1949	87,450,000	53,948,462
1950	92,050,000	66,266,055
1951	95,600,000	73,136,179

Historical Natural Gas Production - cont'd.

Year	Gross MCF	Net Taxable MCF
1952	104,300,000	77,253,383
1953	104,900,000	77,982,000
1954	100,400,000	76,144,783
1955	100,000,000	81,457,597
1956	102,000,000	91,072,880
1957	159,000,000	113,937,978
1958	158,000,000	120,449,451
1959	194,000,000	151,611,826
1960	213,800,000	169,747,464
1961	226,800,000	185,585,937
1962	230,800,000	195,104,386
1963	240,500,000	193,637,934
1964	259,900,000	221,588,565
1965	258,900,000	218,565,497
1966	266,966,000	216,263,811
1967	257,965,000	209,582,267
1968	283,916,000	220,631,045
1969	342,998,000	243,825,419
1970	317,970,129	260,037,715
1971	310,113,187	282,320,781
1972	308,668,300	285,426,141
1973	321,134,758	287,818,223
1974	291,521,549	265,600,635
1975	273,076,164	248,528,881
1976	330,220,509	260,752,431
1977	298,535,962	272,300,637
1978	372,526,289	273,724,975
1979	390,493,988	333,322,180
1980	450,533,045**	349,634,385

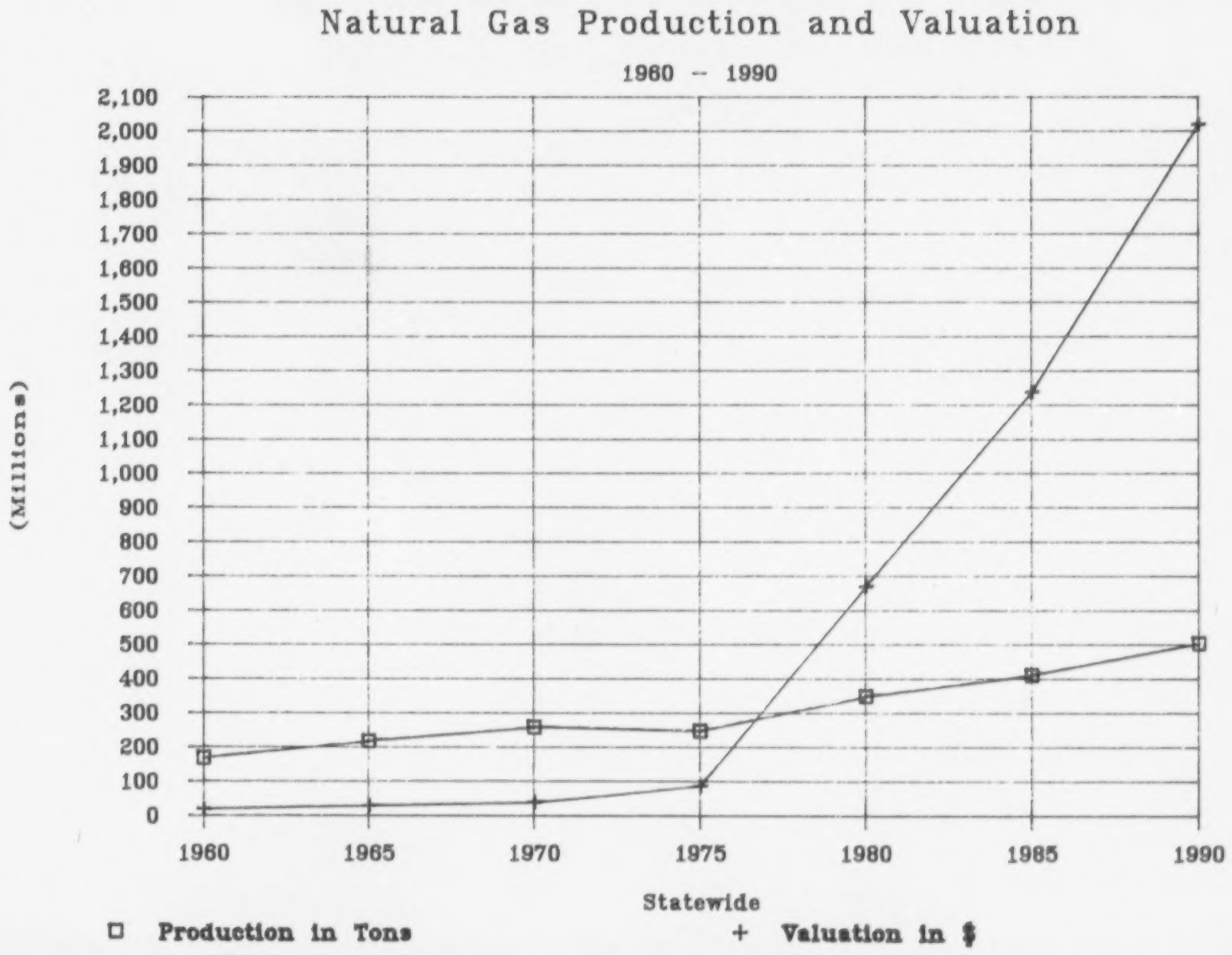
Historical Natural Gas Production - cont'd.

Year	Gross MCF	Net Taxable MCF
1981	437,014,500**	353,076,052
1982	459,321,013**	351,192,737
1983	539,774,090**	395,656,547
1984	600,137,792**	447,515,295
1985	597,896,090	412,026,614
Cumulative Total	11,212,418,368	9,075,112,453

Sources: Bureau of Mines (1918 - 1969)
Wyoming Department of Revenue and Taxation (1970-1985)

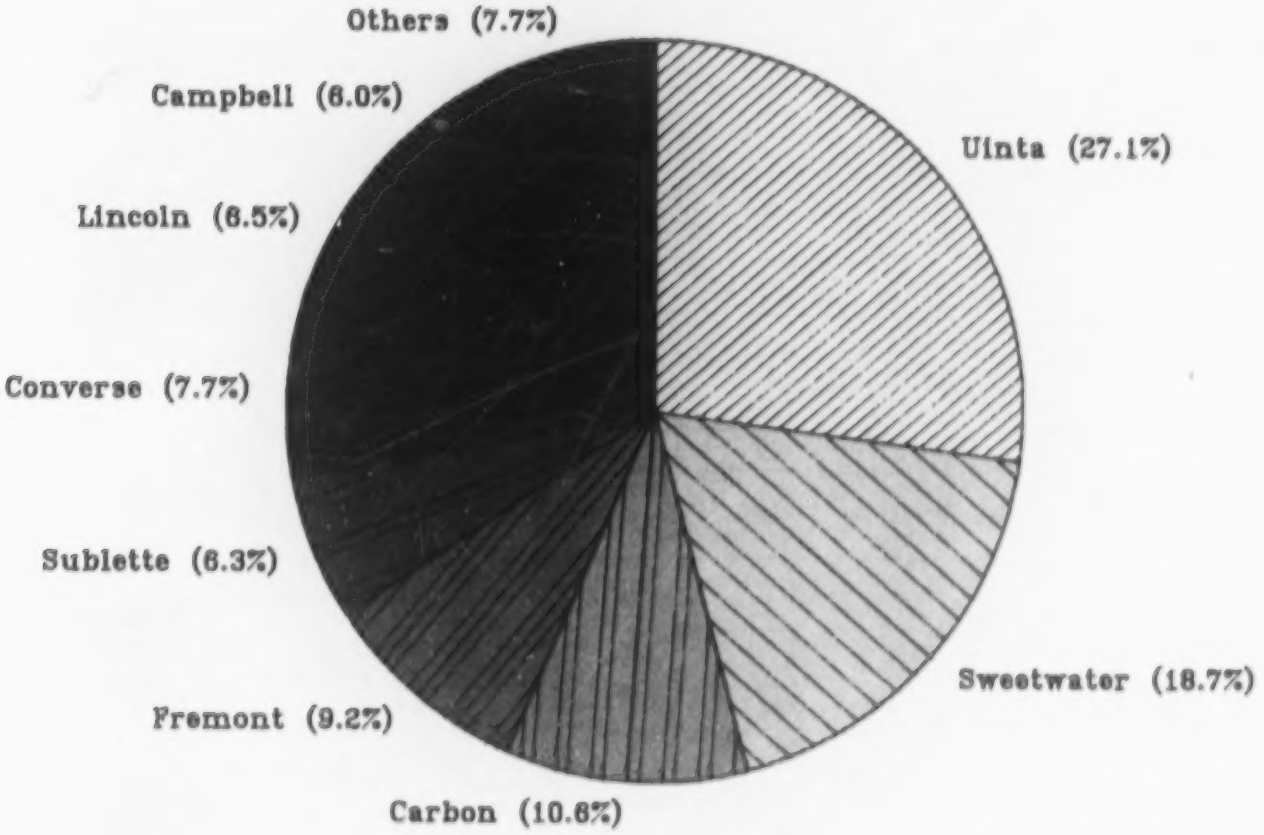
**Wyoming Oil and Gas Commission

*Wyoming has had gas production since 1903, but it was included in other states.


Natural Gas Production and Valuation
1960 -- 1990
(Millions)
2,100
2,000
1,900
1,800
1,700
1,600
1,500
1,400
1,300
1,200
1,100
1,000
900
800
700
600
500
400
300
200
100
0
1960
1965
1970
1975
1980
1985
1990
Statewide
Production in Tons
Valuation in $

1985 Natural Gas Production by County

Total Production = 429,714,807 MCF



PETROLEUM

The first recorded reference to the occurrence of oil in Wyoming dates back to 1833, when Captain Bonneville visited the "Great Tar Spring" on the Popo Agie River near present day Lander.

The first commercial marketing of oil occurred in 1851 from an oil seep on Poison Spider Creek, west of present day Casper. Records indicate that Jim Bridger, Kit Carson, and others mixed the oil with flour and sold the product to settlers as axle grease.

The first oil field was discovered by Mike Murphy in 1884, when he drilled a 300 foot well near the "Great Tar Spring". This field, Dallas Dome, is still producing oil, 100 years after its discovery.

Pennsylvania Oil and Gas Company built the first small refinery in Wyoming at Casper in 1895. During the period 1900-1920, drilling revealed several of the state's largest fields, including Oregon Basin and Elk Basin in Park County, Garland in Big Horn County, and Lost Soldier in Sweetwater County.

The lack of nearby markets and the high cost of transporting oil by rail, resulted in low demand for Wyoming oil, and crude prices dropped to as low as 10¢ per barrel in the 1930's. It was not until World War II that development moved into full swing. This expansion continued into the 1970's.

Oil is derived from the alteration of organic matter by heat and pressure. Petroleum originates in sedimentary rock environments, but may migrate to other locations, so that there are oil reservoirs known from volcanic and metamorphic rock sequences as well. Most oil is found in sedimentary rocks, in occurrences which may be divided into structural or stratigraphic traps. A structural trap is one where the oil is maintained in place by mechanical means, such as,

folding, faulting, or some combination of the two. Stratigraphic traps involve a change in rock type, from permeable to impermeable, with the oil held in the permeable portion. A stratigraphic unit which changes from a sandstone (permeable) to a shale (impermeable) is an example of a stratigraphic trap. Most of the early discoveries in Wyoming were in large structural traps with obvious surface expression. Modern exploration is focused on deep, subtle structures using sophisticated seismic techniques to discover new reserves. The delineation of stratigraphic traps is based on careful analysis of trends and rock types along with the application of interpretation and imagination by petroleum geologists.

Reservoir rocks in Wyoming range from Tertiary to Precambrian in age. In general, fields in stable interior basin areas are characterized by stratigraphic traps and produce from younger (Cretaceous and Tertiary) formations. Fields in more highly deformed basin margins are usually characterized by structural traps, and production is from older rocks.

The largest oil producing regions in Wyoming, in order, are: the Powder River Basin, Green River Basin, Big Horn Basin, Overthrust Belt, and Wind River Basin.

Approximately 1,300 total wells were drilled in Wyoming in 1985, based on an extrapolation of drilling permits. Based on that same method, approximately 600 wells will be drilled in 1986.

Early oil production in Wyoming peaked in 1923, after discovery and development of large fields, such as: Salt Creek, Elk Basin, Oregon Basin, and Hamilton Dome. A long period of decline followed these early discoveries until the second World War led to a resurgence which continued to 1970, when the maximum annual production of 155,743,349 barrels was recorded. Since 1970

production has been steadily declining, due to depletion of the old large fields, like Salt Creek. At present, over 50 percent of Wyoming's production comes from ten large fields which average over 50 years in age. Newer discoveries in the state are concentrated primarily in Campbell County (Hilight, Raven Creek, Hartzog Draw fields) and the Overthrust Belt.

Wyoming ranks sixth in crude oil production, behind Texas, Alaska, Louisiana, California, and Oklahoma. However, it dominates Rocky Mountain production, with 44% of the production from the area, and 64% of the reserves.

The dominant use of petroleum is as a fuel for internal combustion engines or industrial and residential heating. However, petroleum derivatives are used to manufacture many kinds of lubricating and hydraulic fluids, fibers, medicines, plastics, and a number of other products, ranging from paints to synthetic rubber.

Although production has been slowly declining, valuation of oil production in Wyoming increased dramatically since the initiation of OPEC price increases in the early 1970's, and since decontrol of domestic oil prices in 1980. In 1981, oil production accounted for 44% of the total state valuation, some 3.6 billion dollars. Oil valuation has declined since 1981 and this decline has been precipitous in the last 9 months, but petroleum will remain the state's most valuable mineral product.

Currently, six refineries are operating in Wyoming with a total capacity of 175,000 barrels per day. These refineries can process less than half of Wyoming's daily crude oil production, the remainder being transported by pipeline to neighboring states.

The most recent estimate of discovered oil reserves in Wyoming, made by

the American Petroleum Institute, reports a total state reserve of 800 million barrels. This figure has been declining steadily since 1971, and although new discoveries in the Overthrust Belt will slow the decline, the downward trend will continue.

The jump in production seen in 1984 is due to liquids stripped in the Overthrust gas processing plants being included in oil production.

Given new exploration techniques, along with enhanced recovery methods which are coming into increasing use, Wyoming will continue to lead the Rocky Mountain region in oil production for some time. If oil shale utilization ever reaches large scale fruition, Wyoming will be a significant oil producer well into the next century.

The collapse of oil prices which has devastated the U.S. petroleum industry has not spared Wyoming. The Latese Hughes active rig count stands at 25, with last year's count on the same date being 97. Production totals in 1986 will not be greatly lowered, but the trend from then on will be steadily downward.

Rebound will occur, but the question is, what remnant of the oil industry will survive, and in what condition will U.S. energy security be when conditions finally improve.

HISTORICAL PETROLEUM PRODUCTION

Year	Gross Bbls.	Net Taxable Bbls.
1894	2,369	
1895	3,455	
1896	2,878	
1897	3,650	
1898	5,475	
1899	5,560	
1900	5,450	
1901	5,400	
1902	6,253	
1903	8,960	
1904	11,542	
1905	8,454	
1906	7,000	
1907	9,339	
1908	17,775	
1909	22,137	
1910	115,430	
1911	186,695	
1912	1,572,306	
1913	2,406,522	
1914	3,560,375	
1915	4,245,525	
1916	6,234,137	
1917	8,978,680	
1918	12,596,287	
1919	13,172,000	
1920	16,831,000	
1921	19,333,000	16,066,125
1922	26,715,000	16,926,406
1923	44,785,000	21,769,826
1924	39,498,000	35,714,747

Historical Petroleum Production - cont'd.

Year	Gross Bbls.	Net Taxable Bbls.
1925	29,173,000	32,495,306
1926	25,776,000	24,753,727
1927	21,307,000	21,681,708
1928	21,461,000	18,508,699
1929	19,314,000	16,895,390
1930	17,868,000	15,639,170
1931	14,834,000	13,008,011
1932	13,418,000	11,353,006
1933	11,227,000	10,124,504
1934	12,556,000	11,108,115
1935	13,755,000	12,247,316
1936	14,582,000	13,062,296
1937	19,166,000	17,704,873
1938	19,022,000	17,781,813
1939	21,454,000	20,465,457
1940	25,711,000	24,242,112
1941	29,878,000	28,378,725
1942	32,812,000	30,259,013
1943	34,253,000	31,454,751
1944	33,356,000	30,554,213
1945	36,219,000	33,253,522
1946	38,977,000	35,847,249
1947	44,722,000	40,662,626
1948	55,032,000	49,978,630
1949	47,890,000	44,150,095
1950	61,631,000	56,411,712
1951	68,929,000	63,444,374
1952	68,074,000	62,723,252
1953	82,618,000	76,839,278
1954	93,533,000	85,005,784
1955	99,483,000	91,006,385
1956	104,830,000	96,278,109

Historical Petroleum Production - cont'd.

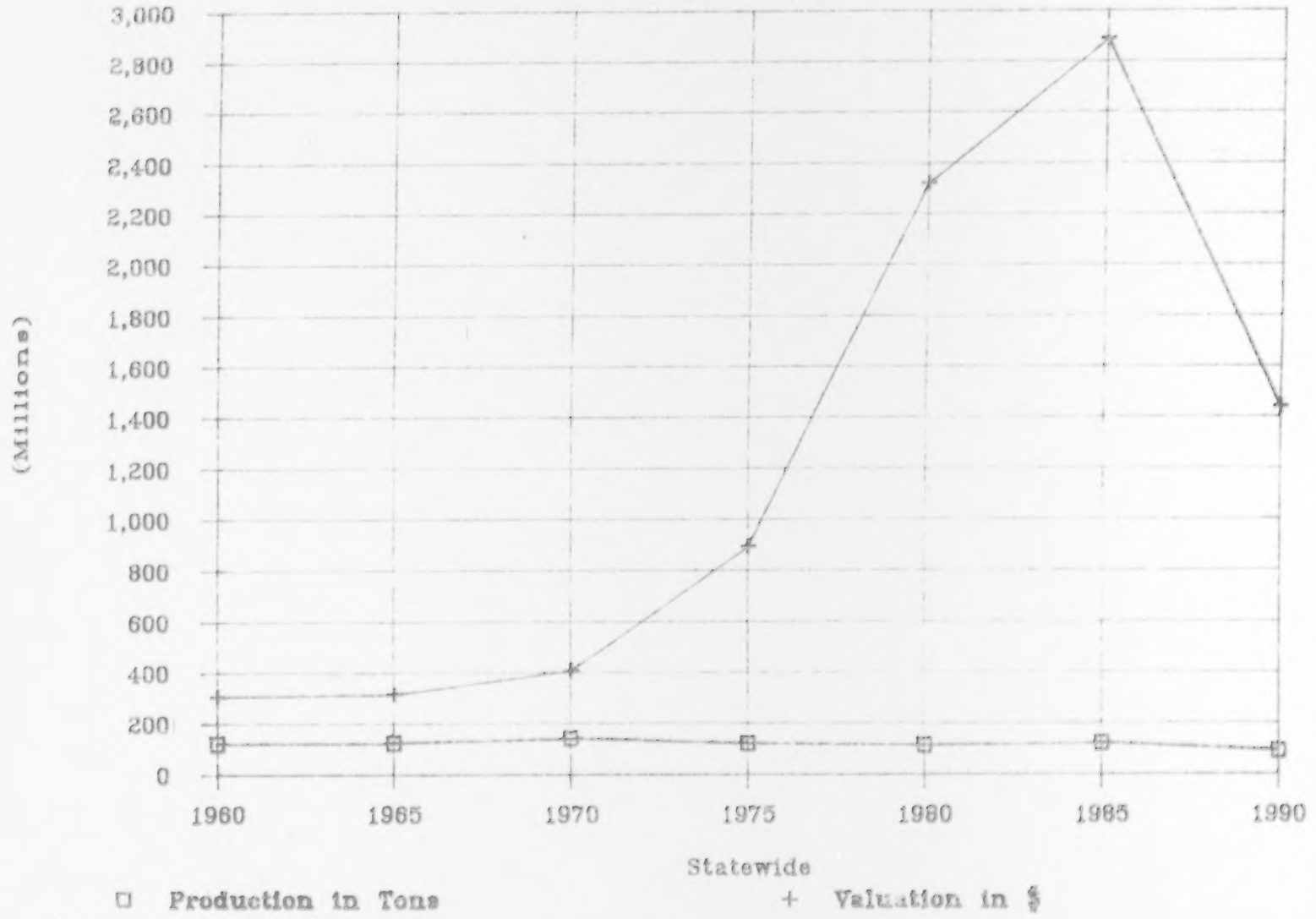
Year	Gross Bbls.	Net Taxable Bbls.
1957	106,616,000	100,373,021
1958	109,584,000	103,483,116
1959	125,968,000	113,643,205
1960	133,910,000	121,097,650
1961	141,937,000	128,657,407
1962	135,847,000	123,381,779
1963	144,407,000	123,852,669
1964	138,752,000	125,376,557
1965	138,314,000	125,136,181
1966	134,470,000	121,638,887
1967	136,310,000	122,816,724
1968	144,250,000	129,985,723
1969	154,945,000	140,522,875
1970	155,743,349	141,546,503
1971	146,261,295	132,588,059
1972	137,564,566	125,222,375
1973	139,054,568	126,943,274
1974	138,735,974	127,555,252
1975	132,237,026	120,629,951
1976	134,148,510	120,571,157
1977	135,994,695	124,328,857
1978	137,384,886	122,799,348
1979	126,669,861	115,678,022
1980	126,361,962*	114,284,682
1981	118,844,000*	111,912,600
1982	117,898,667*	108,055,462
1983	120,979,721	110,420,981
1984	127,763,146	117,289,568
1985	130,984,917	123,172,534
Cumulative Total	5,305,203,797	4,750,455,744

Sources: Bureau of Mines (1894-1969)
Wyoming Department of Revenue and Taxation (1970-1985)

*Wyoming Oil and Gas Commission

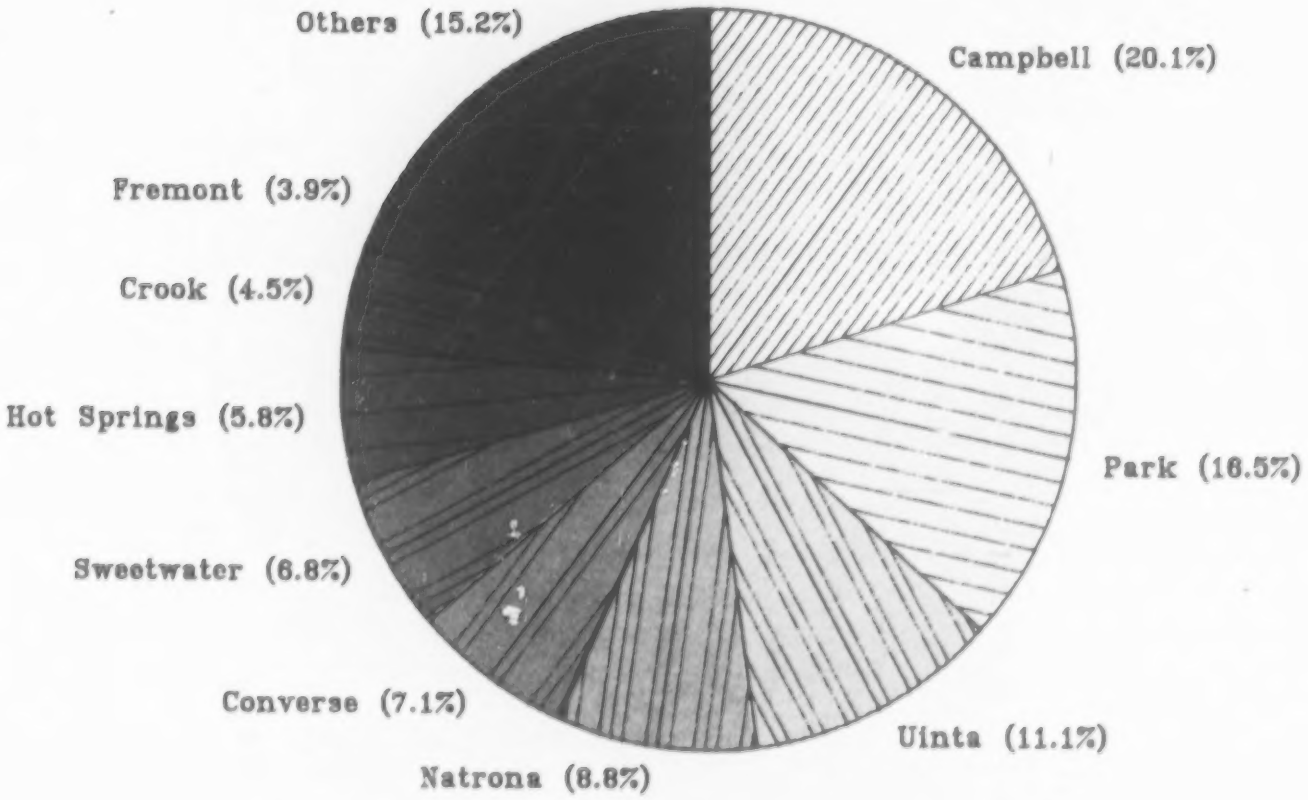
Oil Production and Valuation

1960 - 1990



1985 Crude Oil Production by County

Total Production = 123,304,242 Barrels



TRONA

The world's largest deposit of trona is found in Wyoming's Green River Basin. From the deposit, the state produces about 95 percent of the nation's supply of natural soda ash. Several deposits of natural soda ash are known in the western United States, but only Wyoming and California have active mines. Deposits have also been identified in several other countries, but the only one currently producing is Kenya.

Trona is a water-bearing sodium bicarbonate compound with many uses. Trona originated as a precipitate from a large fresh-water lake, Lake Gosiute, which covered as much as 15,000 square miles of surface in southwestern Wyoming. The trona was precipitated when Lake Gosiute underwent a period of restricted circulation and became highly saline at the same time as elevated temperatures resulted in increased evaporation.

More than 40 individual beds of trona underlie an area of about 1,300 square miles. It is estimated that some 50 billion tons of mineable trona, plus an additional 30 to 40 billion tons of marginal trona, are contained in these beds.

In 1938, Mountain Fuel Supply Company drilled an oil and gas test well northwest of Green River, Wyoming, and discovered a brine rich in trona. Exploration by the Union Pacific Railroad, in 1940-1942, indicated the presence of extensive reserves of trona. In 1946, Westvaco, the predecessor of FMC Corporation, sank a 1500 foot shaft to the main trona deposit and constructed a pilot refinery at the surface. The first soda ash was produced by FMC in 1950, with Stauffer Chemical coming on line in 1962, Allied Chemical in 1968, Texasgulf in 1975, and Tenneco Oil Company in 1982.

All Wyoming trona mining is done underground. Room and pillar methods and coal mining equipment, modified to withstand the harder ore, are used.

Both conventional and continuous mining techniques have been traditionally used, but recently long wall mining has been successfully employed.

In the past, soda ash was primarily produced synthetically by the Solvay process. This process combines salt (sodium chloride) and calcium carbonate (limestone) to make sodium carbonate (soda ash). The last plant using the Solvay method in this country was shut down last year. The Solvay plant shutdowns were the result of high capital, labor, and energy requirements, but the greatest factor was the environmental considerations. For each ton of soda ash produced by the Solvay process, about 1.7 tons of waste are generated, which poses an enormous disposal problem.

Trona is refined by first subjecting the ore to a heat of 400°F to remove water of crystallization, combustible materials, and carbon dioxide. This crude soda residue is then taken into water solution and filtered to remove insoluable residues. The filtered material is then dried. The final product is pure soda ash.

Trona's primary use is in glassmaking, which takes around 55% of the United States' consumption. The chemical industry accounts for 23% of consumption, followed by soap and detergent at 5%, pulp and paper manufacturing at 4%, water treatment at 3%, and 10% in various applications including pharmaceuticals, photography, metallurgy, and petroleum refining.

Wyoming trona production has grown from 29,658 tons in 1950, to 10,776,304 tons in 1985. Valuation of 1985 production was $96,389,980. The short-term future of Wyoming trona is less favorable than earlier predictions, due to slumps in housing and the automobile industry, two prime users of glass, which

is trona's most important market. In the longer term, significant growth in Wyoming's trona market would seem to be likely to come from Europe, where most soda ash is currently produced by the Solvay process, with the same problems there as in this country.

China has expressed interest as well, but she has abundant raw materials for Solvay extraction, and is currently building a large plant to utilize them using this process.

Whatever the demand, Wyoming possesses the resources to meet it. If trona had been mined at the current rates since the year 1 A.D., only 20% of the known reserves would have been depleted, and if mining had proceeded at the same rate since the rise of the first dynasty in Egypt, 50% of the known reserves would still remain untouched.

An annual compilation of trona production in Wyoming is given in the following table.

HISTORICAL TRONA PRODUCTION

Year	Net Tons
1950	29,658
1951	76,769
1952	56,733
1953	262,001
1954	465,851
1955	529,311
1956	541,456
1957	633,917
1958	564,474
1959	747,164
1960	862,879
1961	809,762
1962	1,082,119
1963	1,200,525
1964	1,480,746
1965	1,782,745
1966	2,147,390
1967	2,323,475
1968	2,793,325
1969	3,708,657
1970	4,022,304
1971	4,203,677
1972	4,783,946
1973	6,029,984
1974	7,070,617
1975	7,379,792
1976	8,800,607
1977	10,215,602

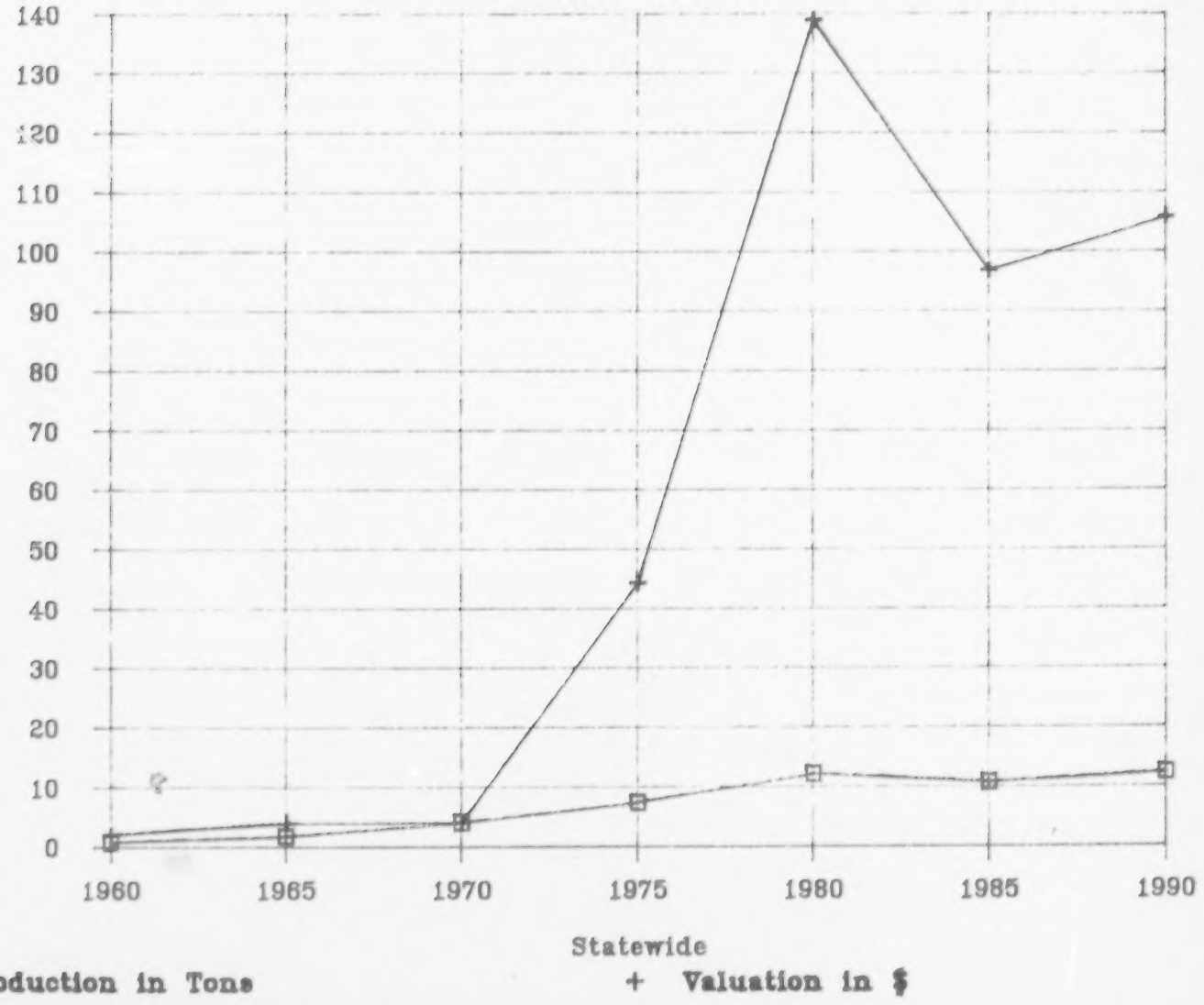
Historical Trona Production - cont'd.

Year	Net Tons
1978	9,974,237
1979	11,771,985
1980	12,159,241
1981	11,787,731
1982	10,073,690
1983	10,542,417
1984	10,971,209
1985	10,776,304
Cumulative Total	162,662,037

Source: Wyoming Department of Revenue and Taxation

Trona Production and Valuation

1960 - 1990



URANIUM

Uranium was discovered as an element in 1789 and isolated as a metal in 1842. A few minor uses for uranium salts and medical demand for radium created a small market in the 1920's and 1930's. So little was known about possible ore sources in the United States that the uranium ore used in the production of the two atomic bombs dropped on Japan came from the Belgian Congo. The Atomic Energy Commission was appointed by President Truman in 1946. In the late 1940's and early 1950's the public was encouraged to prospect for uranium and the first great uranium rush was on.

Uranium is a widespread, though uncommon, primary constituent of crystalline rocks of the earth's crust. As a result of weathering processes, it is often removed from these source rocks and redeposited in sediments. Uranium deposits are known from rocks as old as Precambrian, and as recent as Pleistocene, and all ages in-between.

The most important deposits of uranium in Wyoming occur in permeable sandstones of Tertiary age. The uranium was originally contained in the crystalline rocks which form the cores of the state's mountain ranges. The uranium was leached from these rocks and precipitated in the much younger sandstones.

Uranium ore is recovered by open pit, underground, and solution mining methods. Open pit and underground mining is carried out in the usual manner, the only difference being that the material to be removed is determined by using a scintillation counter to delineate the radioactive ore.

In solution mining, a shaft is drilled into the ore body. Chemicals are introduced down this shaft which dissolve the uranium out of the rock. The

uranium-containing solution is removed through another well or wells drilled to the depth of the ore body. The solution on the surface is processed much as the solutions obtained by conventional milling methods to remove the dissolved uranium. Due to the toxic nature of the solutions used, great care must be exercised in solution mining operations to prevent ground water contamination.

Milling involves grinding and crushing the ore, after which it is treated with acid to take the uranium into solution. The leachate is treated with various chemicals to concentrate the uranium and simplify it chemically. The final concentrate is evaporated to yield "yellow cake". The yellow cake consists almost entirely of uranium 238 and a small percentage of uranium 235, the fissionable isotope. The uranium must be enriched to around 3.5% U 235 for power reactor use, while weapons grade material has a U 235 content of over 90%. The yellow cake is shipped to various conversion and enrichment facilities to be upgraded to the required level.

The primary uses of uranium are as fuel for nuclear reactors and national defense. The drop in power demand coupled with uneasiness over plant reliability have combined to slow the construction of nuclear power plants, and greatly reduce the requirements for uranium. Defense requirements are difficult to determine, but new weapon construction plus upgrading of existing stock piles (nuclear warheads deteriorate through time) has increased, though not enough to increase demand significantly. Other uses for uranium are in X-ray tubes, ultraviolet lamps, glass colorants, ceramics, and steel.

Wyoming's first production of uranium occurred in 1953, when 5,156 tons of ore were mined. The largest production of 5,517,070 tons was attained in 1978. Wyoming ranks second to New Mexico in both uranium production and amount of reserves. The history of Wyoming uranium production is given in the accom-

panying table.

As of January 1986, Wyoming had one active uranium surface mining operation and three in-situ projects. Given the availability of cheap high grade ore from abroad coupled with the difficulties of the domestic nuclear power industry, it seems unlikely that the uranium mining and milling industry will ever again play a significant role in Wyoming's mineral economy. The reserves are here, but market and competition factors make the future appear bleak, to say the least.

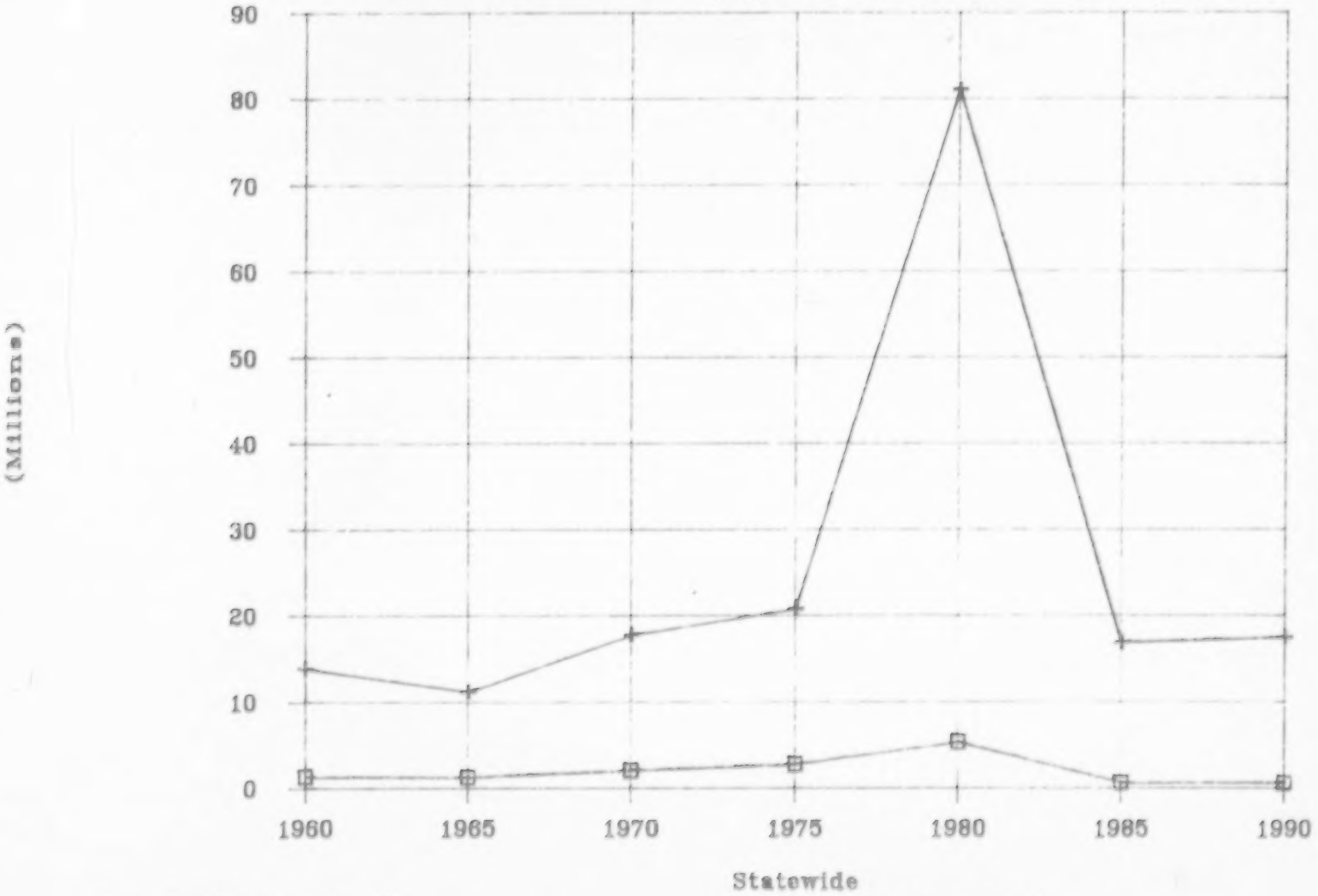
HISTORICAL URANIUM PRODUCTION

Year	Net Tons
1953	5,156
1954	10,443
1955	45,782
1956	116,463
1957	264,133
1958	559,053
1959	810,514
1960	1,307,919
1961	1,542,192
1962	1,394,704
1963	1,289,595
1964	1,126,827
1965	1,222,821
1966	916,415
1967	1,242,187
1968	1,977,258
1969	1,631,518
1970	2,042,074
1971	2,044,943
1972	2,390,100
1973	2,588,011
1974	2,287,697
1975	2,736,663
1976	3,302,422
1977	3,986,025
1978	5,517,070
1979	5,512,345
1980	5,352,337
1981	4,560,683
1982	3,895,510
1983	3,022,650
1984	1,634,262
1985	619,967
Cumulative Total	66,956,373

Source: Wyoming Department of Revenue and Taxation

Uranium Production and Valuation

1960 - 1990



MISCELLANEOUS MINERALS

COPPER

Copper was the first metal utilized by man over 6,000 years ago. Native uncombined copper was utilized for tools, weapons, and jewelry due to the ease with which it could be shaped.

Currently, over half of the copper produced is used in the electrical industry for wire, equipment, and components. Next to silver, copper has the highest electrical conductivity of any metal. Other uses of copper are in plumbing, instruments, household utensils, decorative items, and coinage.

Copper occurs as the native metal or combined in sulphides, oxides, and carbonates. These secondary compounds are the result of weathering and concentration of copper from its original source in low silica igneous rocks.

Copper mineralization occurs sporadically throughout every mountain range in Wyoming. Copper mineralization is most common in Precambrian rocks, but is found in younger rocks in places such as the northern Laramie mountains and the Hartville uplift.

In the interval between 1899 and 1908, over 23.5 million pounds of copper were produced in Wyoming, mostly from the Encampment district, west of Laramie, and in this period Wyoming was one of the leading copper producing states in the nation. Copper production increased during World War I, mostly from the Hartville area, north of Wheatland. Since that time, Wyoming copper production has been insignificant. Recent speculation concerning reopening of the famous Ferris-Haggerty Mine in Carbon County, along with AMAX Minerals' interest in opening a copper mine in the Kirwin district in the Absaroka Mountains in Park County, are very unlikely to come to pass as long as world copper prices remain at their current low levels.

DIAMONDS

Diamond is composed of carbon, arranged in a crystal structure which makes it the hardest natural substance known. Diamonds were first prized as gemstones centuries ago in India and Borneo. It was not until much later that the applications of diamond as an abrasive in grinding wheels and drill bits, and as wire drawing dies, were realized.

Diamonds are produced in South Africa, the U.S.S.R., Brazil, and the East Indies. No natural diamonds are produced in the United States, although the General Electric Company has produced synthetic diamonds of industrial grade since 1955.

The primary source of diamonds is the mineral Kimberlite, a greenish gray crystalline rock which is the solidified lava conduit of an ancient volcano. Diamonds are produced naturally in the high pressures and temperatures found in pockets of molten rock deep beneath the surface. Exposure of these Kimberlite pipes results in weathering of diamonds from the rock and their concentration in stream gravels. About 50% of the diamonds recovered are taken by placer mining of old stream channels.

Kimberlite pipes occur along the eastern Wyoming-Colorado border. A number of small (less than 2 mm) diamonds have been extracted from these rocks. Cominco American conducted preliminary evaluation work on the deposits in Wyoming but these efforts have been abandoned.

GOLD

Gold has been treasured since ancient times due to its beauty, permanence, and the ease with which it can be worked. In the latter half of the 20th century, it has become a valuable industrial material, with applications in computers, shielding, high performance welding and other uses. Gold's most widespread use remains as a monetary standard. Nearly half of the gold that has ever been mined is in government vaults.

Gold is one of the "noble" metals. It does not combine chemically with other elements. Gold is found in a wide variety of geologic environments associated with various rocks and minerals. Due to its weight and lack of impurities, it is concentrated by stream action into placer deposits where it is recovered by dredging and washing sediments.

Gold has been found in all of the mountain ranges of Wyoming. Past significant mining operations were located in the Wind River Mountains, the Medicine Bow Mountains, and the Sierra Madre Mountains. No mines in these districts were exploited below 400 feet, and many were abandoned while still in the ore body.

Approximately 325,000 ounces of gold have been produced from Wyoming. No operations are currently active, although current gold prices have stimulated renewed interest and exploration.

GYPSUM

Gypsum has been used since ancient times for carving and decoration. The Greeks used it to manufacture plaster, which remains the principle use for the mineral. In the late 1800's a method to retard the setting of gypsum plaster was developed, and this revolutionized the industry by permitting the use of plaster in construction. The development of prefabricated wallboard revolutionized the industry again in the 1960's. Approximately two-thirds of the gypsum currently marketed is in the form of prefabricated products.

Gypsum is precipitated primarily from sea water, but may be deposited in saline lakes or hot springs. It often occurs as a product of volcanic activity and may occur in metallic mineral veins.

Gypsum, in Wyoming, primarily occurs in layers in Permian, Triassic, and Jurassic red beds at various localities within the state. Some gypsum has been mined in Wyoming since the 1890's, but current production comes from mines in Albany, Big Horn, and Park Counties. Virtually all of Wyoming's gypsum output is utilized in the manufacture of wallboard for the construction industry and the manufacturing of cement.

JADE

Jade has been a prized gemstone in China and the Far East for a long time. It is valued for its toughness, ability to take a high polish, and the ease with which it is carved.

The term jade is applied to two different minerals which have roughly similar properties. The mineral jadeite is a sodium-aluminum silicate. It is hard and tough, and varies from white to greenish-white to emerald green. It has been found in Burma, Southern China, Tibet, Mexico, and South America. No jadeite has been found in Wyoming. The second variety of jade is the mineral nephrite, a calcium-magnesium-aluminum silicate. It is not quite so hard or tough as jadeite. Its color varies from olive-green through dark green to black. Light "apple-green" jade is the most valued. It has been found in China, Turkestan, Siberia, New Zealand, and Alaska, as well as Wyoming.

Jadeite occurs in metamorphic rocks in veins and masses. Nephrite occurs as veins in metamorphic rocks. Wyoming jade occurs as veins in Precambrian metamorphic rocks in the southern Wind River Mountains. Boulders and pebbles of jade occur around the southern end of the Wind River Mountains and on the north end of the Laramie Mountains to the east. Although the jade industry of Wyoming is small, it is well known throughout the world and provides some income and/or a hobby for many people.

ZEOLITES

Zeolites are sodium and/or calcium-aluminum silicate minerals that occur in bedded clay deposits or in vesicles in volcanic rocks. Their current use is in water softening due to their ability to exchange ions with solutions they contact. It is projected that they will be used on a large scale for extraction of radioactive products from nuclear reactor wastes.

The Beaver Rim area of Fremont County contains layered zeolites bedded with clays exposed over a considerable area; however, there is no commercial production at this time.

Tenneco Minerals produces Zeolites in Sweetwater County for use in kitty litter, a significant potential market.

CONSTRUCTION MATERIALS

The major construction materials mined in Wyoming are crushed rock for cement, sand and gravel, and limestone. The cement industry is the largest non-fuel minerals industry in the nation. Cement is vital to the construction and road-building industries and is literally the backbone of modern civilization. Wyoming does have one cement plant in Albany County.

Sand and gravel is the only mineral commodity which is produced in all 50 states, and coincidentally is the only one produced in all of Wyoming's 23 counties. Its primary uses are as aggregate for concrete and bituminous mixes, for road bases and coverings and as fill. Pure sand is used in glass manufacture, foundry molding, and metallurgical applications.

Limestone is utilized as a building and decorative stone, road metal, aggregate, and in sugar beet factories where pure limestone is used as a source of lime and carbon dioxide in the refining process.

COUNTY MINERAL PRODUCTION AND VALUATION

1986

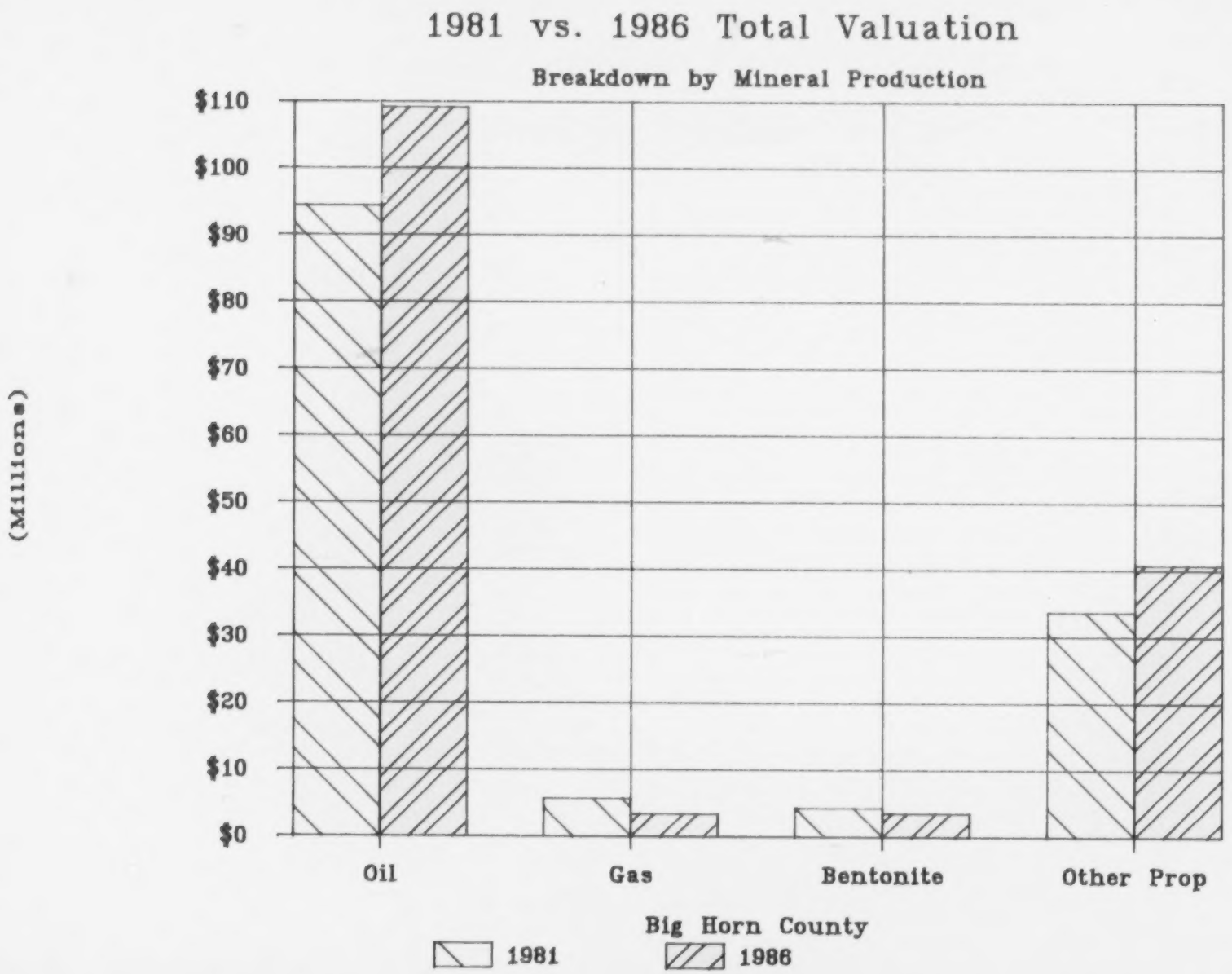
ALBANY COUNTY

Almost 80% of Albany County's mineral valuation in 1986 was on crude oil, with gypsum, cement rock, and construction materials making up the remainder.

Oil production was up slightly in 1985, but valuation per barrel dropped over $4.00, a trend which will continue. The various factors combined to make total 1986 mineral valuation in the county almost one million dollars less than 1985.

BIG HORN COUNTY

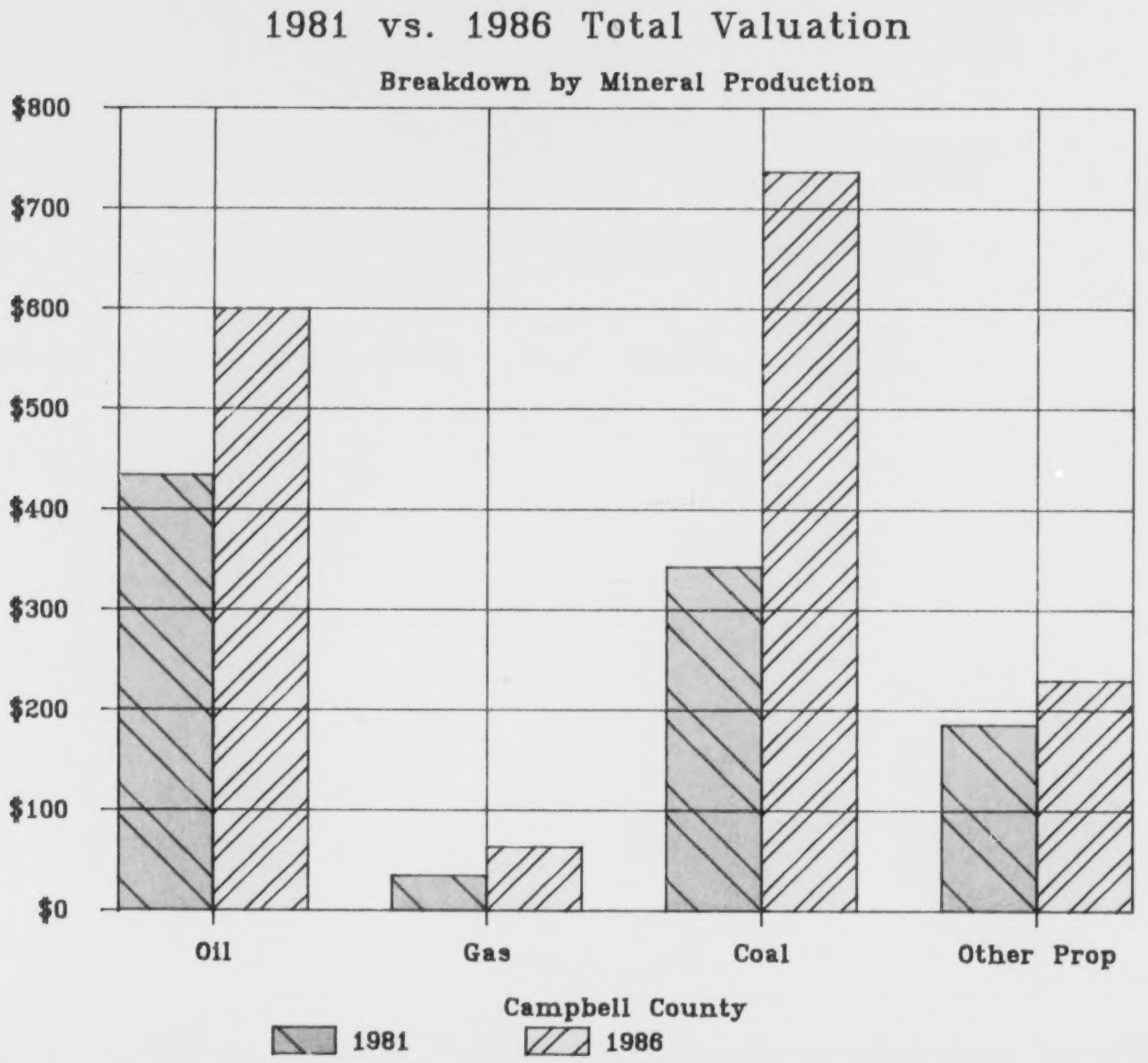
Big Horn County's prime mineral product is crude oil. In 1985, oil valuation accounted for 94% of the county's mineral worth. Production decreased by over 600,000 barrels, and a $.94 per barrel decline in unit value resulted in a valuation decrease of 8 million dollars, a trend that will continue. Natural gas production decreased in 1985, and bentonite decreased by 48,000 tons. Gypsum production grew by 16,000 tons. Minor amounts of clay, sand, and gravel were again produced.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$110
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
Oil
Gas
Bentonite
Other Prop
Big Horn County
1981
1986

CAMPBELL COUNTY

Campbell County leads Wyoming in oil and coal production, and is 5th in natural gas production. Despite a drop of $3.54 in oil valuation per barrel and a 46 cent per ton dip in coal valuation, Campbell County leads all counties in the state with a total mineral valuation of $1,400,292,466. This figure is greater than the total valuation of the entire State in 1972.

The county produced over 24 million barrels of oil in 1985, along with over 109 million tons of coal, 81% of Wyoming's production. Natural gas production fell by nearly 6 million MCF over 1984.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$800
$700
$600
$500
$400
$300
$200
$100
$0
Oil
Gas
Coal
Other Prop
Campbell County
1981
1986

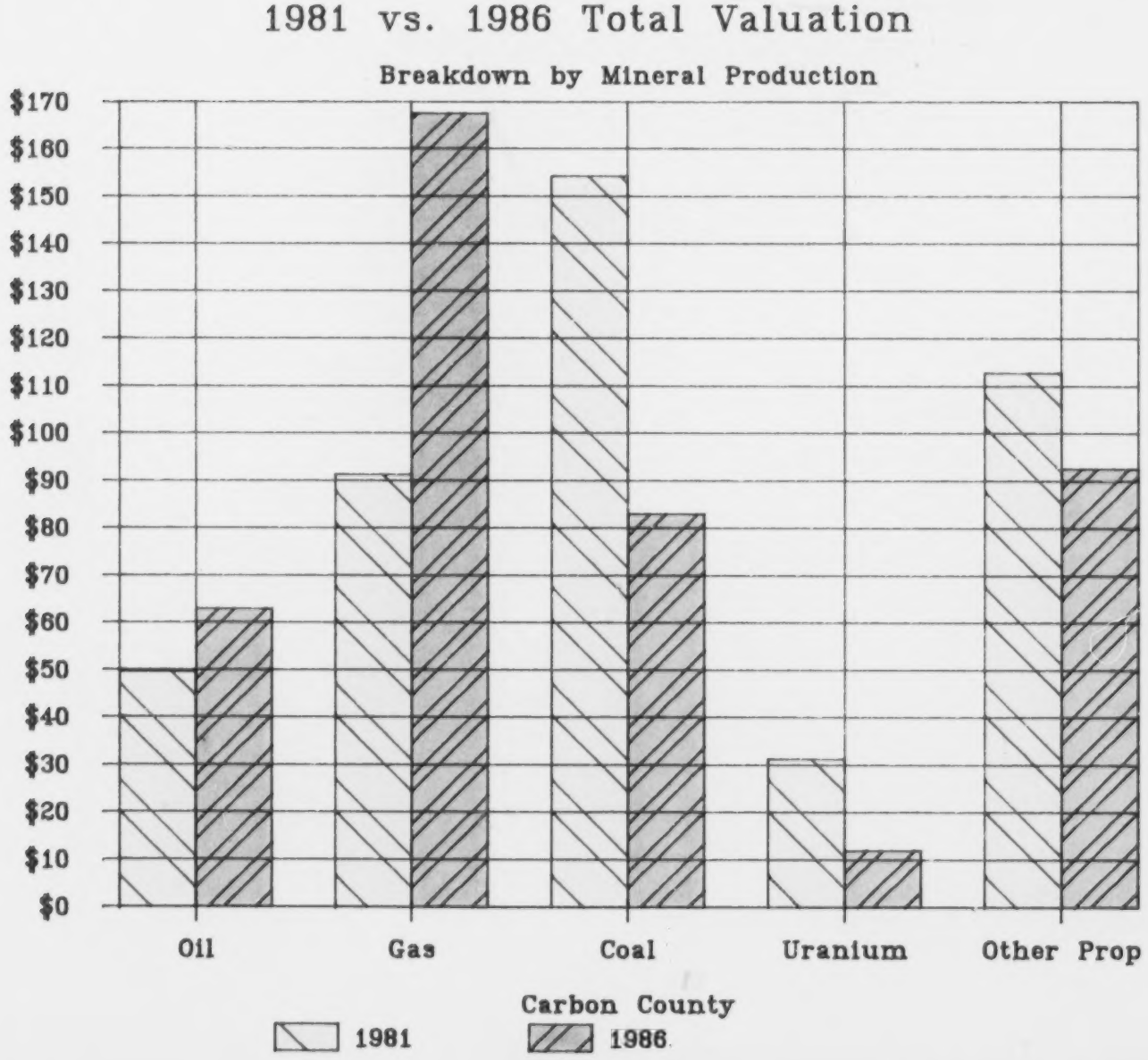
CARBON COUNTY

Natural gas was the most valuable county mineral commodity in 1985, with a total worth of over 167 million dollars.

Carbon county produced 3.1 million tons of coal in 1985, a significant drop over 1984. The high mining costs in Carbon County will continue to fuel this overall downward trend, and production may well cease altogether toward the end of this decade.

The last active uranium operation in the county ceased operations in March, with no prospects of any new activity in sight.

Oil production was up slightly from 2.5 to 2.6 million barrels.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$170
$160
$150
$140
$130
$120
$110
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
Oil
Gas
Coal
Uranium
Other Prop
Carbon County
1981
1986

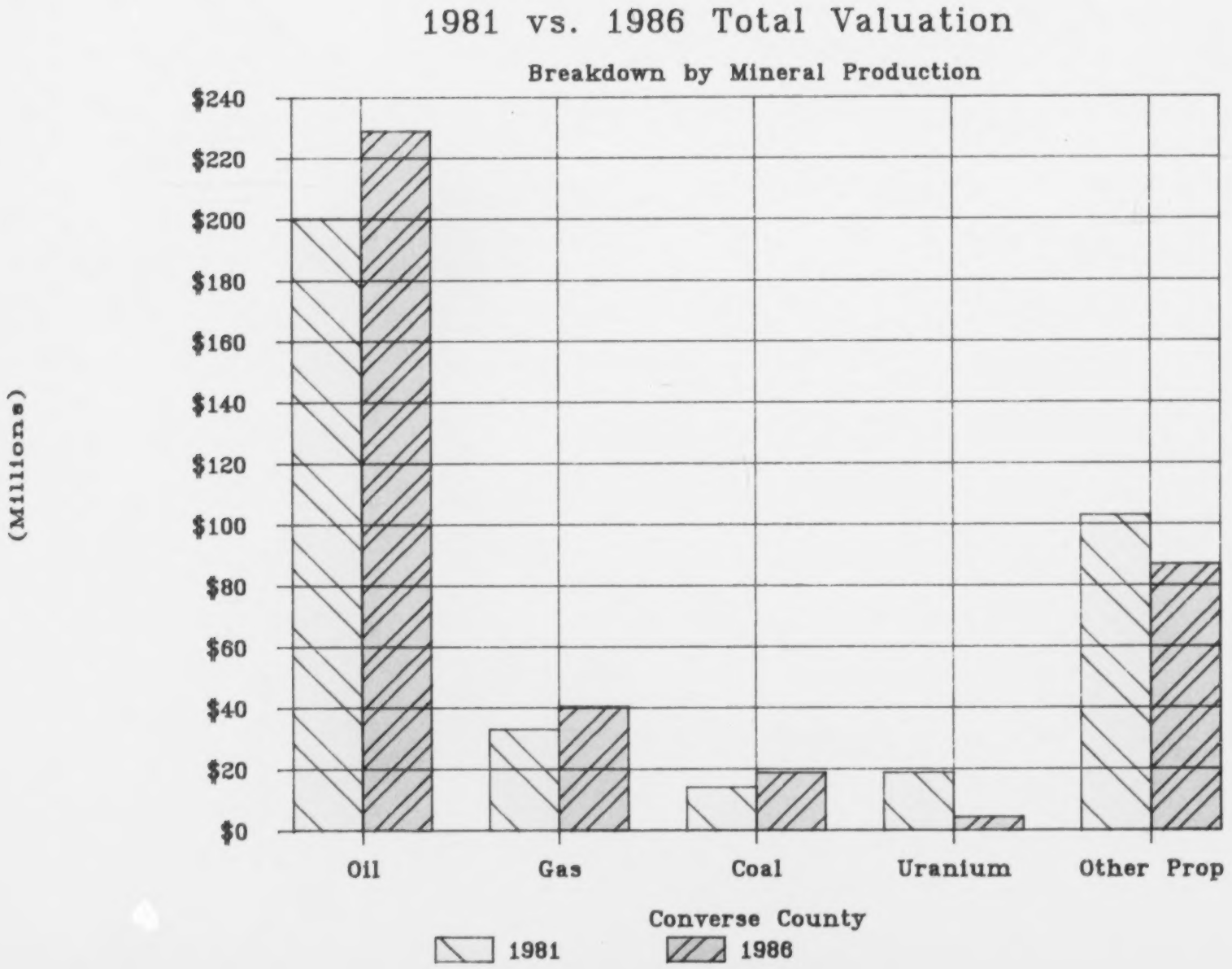
CONVERSE COUNTY

Oil production grew in Converse County in 1985, moving from 8.0 to 8.9 million barrels. Even with a valuation decrease of $3.50 per barrel, total valuation was up 8 million dollars.

Natural gas production more than tripled over 1984, and valuation jumped by almost $3.00 per MCF.

Coal production at the county's only mining operation increased nearly 500,000 tons in 1985.

Although some yellowcake production continues in this county, no full fledged mining is going on.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$240
$220
$200
$180
$160
$140
$120
$100
$80
$60
$40
$20
$0
Oil
Gas
Coal
Uranium
Other Prop
Converse County
1981
1986

CROOK COUNTY

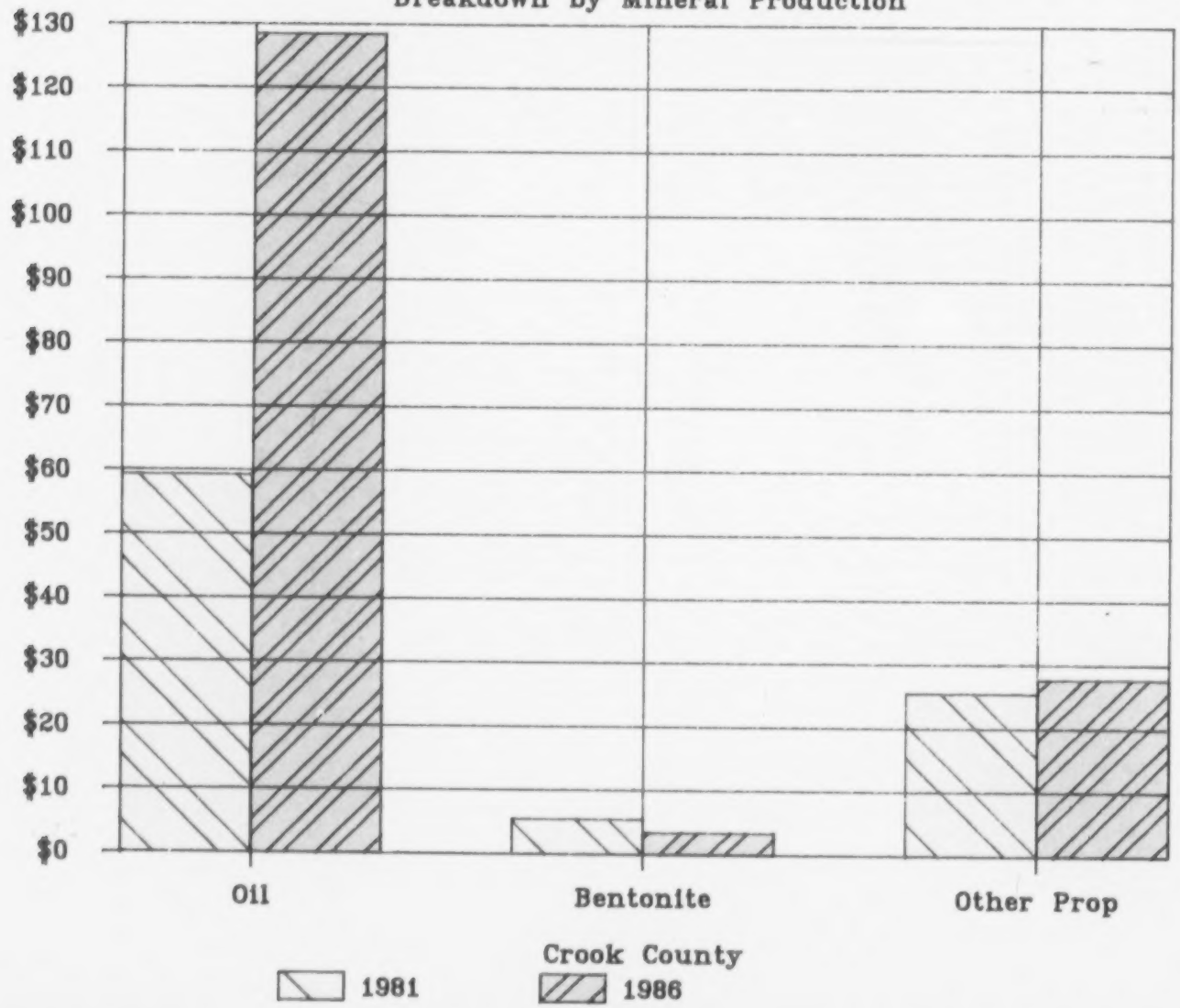
Oil production in Crook County increased by 1.3 million barrels in 1985, and although unit valuation dropped by $1.05 per barrel, total oil valuation increased by over 22 million dollars. Oil accounts for 97% of the county's mineral valuation.

Natural gas production held steady in 1985 but the county's production is so small that minor fluctuations result in large changes in output.

Bentonite production decreased by over 300,000 tons in 1985, reflecting the statewide decrease.

1981 vs. 1986 Total Valuation

Breakdown by Mineral Production

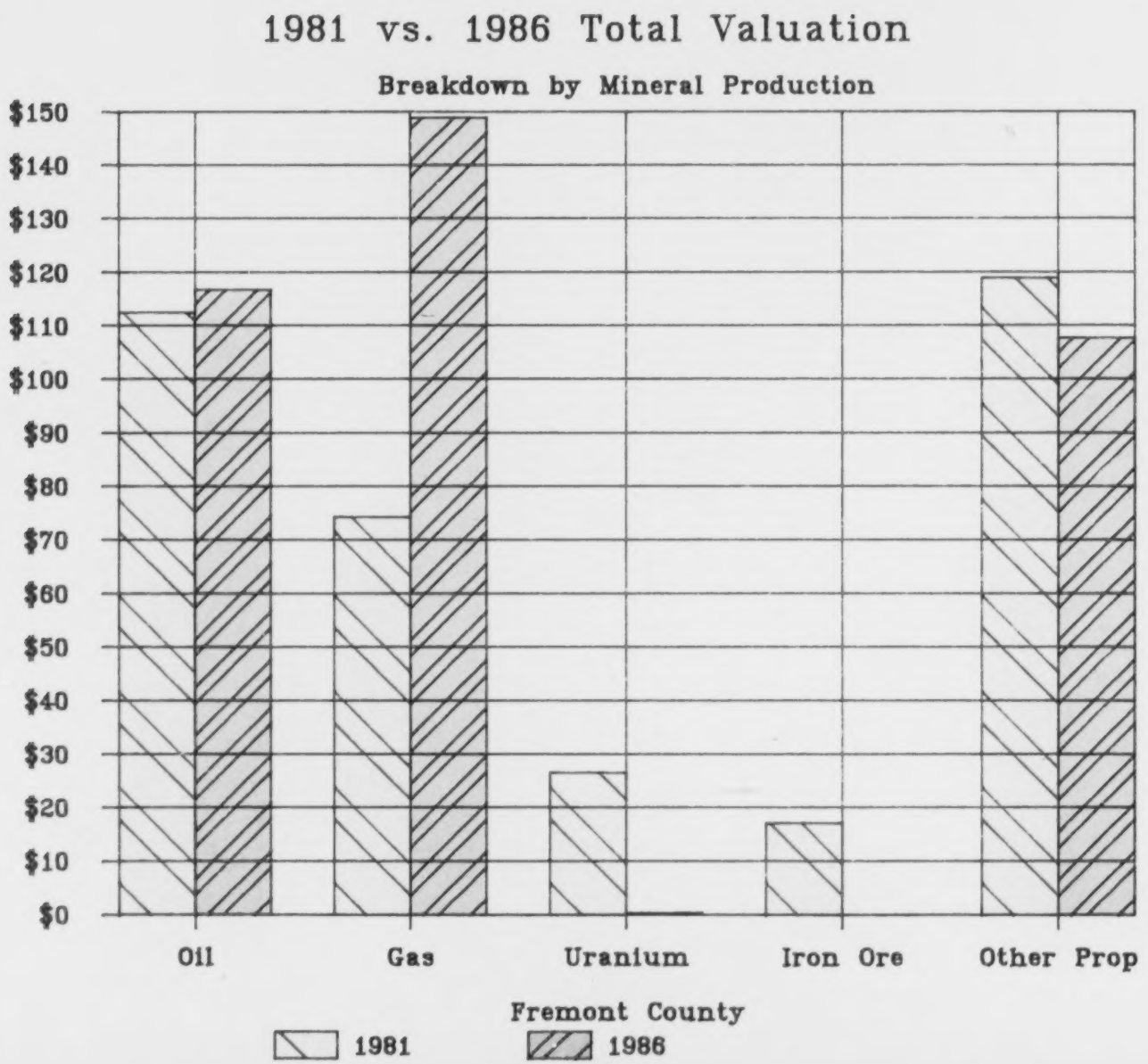


FREMONT COUNTY

Oil production dropped in Fremont County by slightly more than 400,000 barrels in 1985 although it remains the county's most important commodity with a value of over 116 million dollars.

Gas production held steady and unit valuation fell slightly by 10 cents.

Uranium production dropped by over 100,000 tons in 1985, and will decline further, although long range projections suggest an upturn by the close of the decade.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
$150
$140
$130
$120
$110
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
(Millions)
Oil
Gas
Uranium
Iron Ore
Other Prop
Fremont County
1981
1986

GOSHEN COUNTY

Goshen County mineral production consists of a small amount of oil and construction materials.

Its 1986 mineral valuation of 676,000 dollars was one of only three Wyoming counties with mineral production of less than 4 million dollars.

The county's oil is from low production stripper wells and has one of the higher unit valuations in the State, $25.70 per barrel for 1986, a drop of $3.40 from 1985.

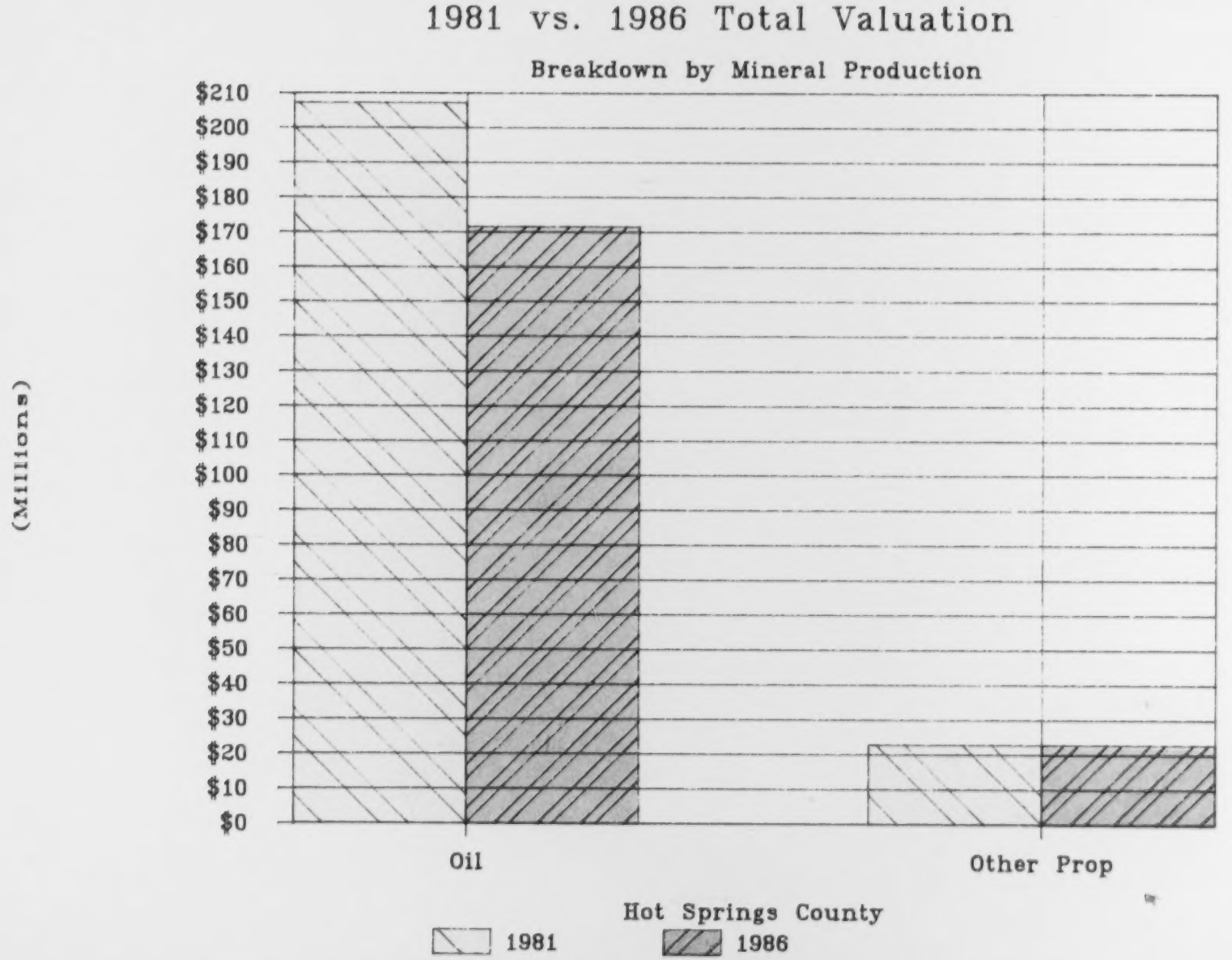
The shutting in of oil wells due to declining prices has struck stripper wells first, so the future of Goshen County's oil production is uncertain.

HOT SPRINGS COUNTY

Oil accounts for 99% of Hot Springs county's mineral valuation. In 1985 production fell slightly by 700,000 barrels, and an $.80 per barrel drop in price resulted in a drop in valuation of nearly $24 million.

Coal production at the Grass Creek Mine was 31,208 tons. The company has filed applications to increase capacity to 700,000 tons over the next several years.

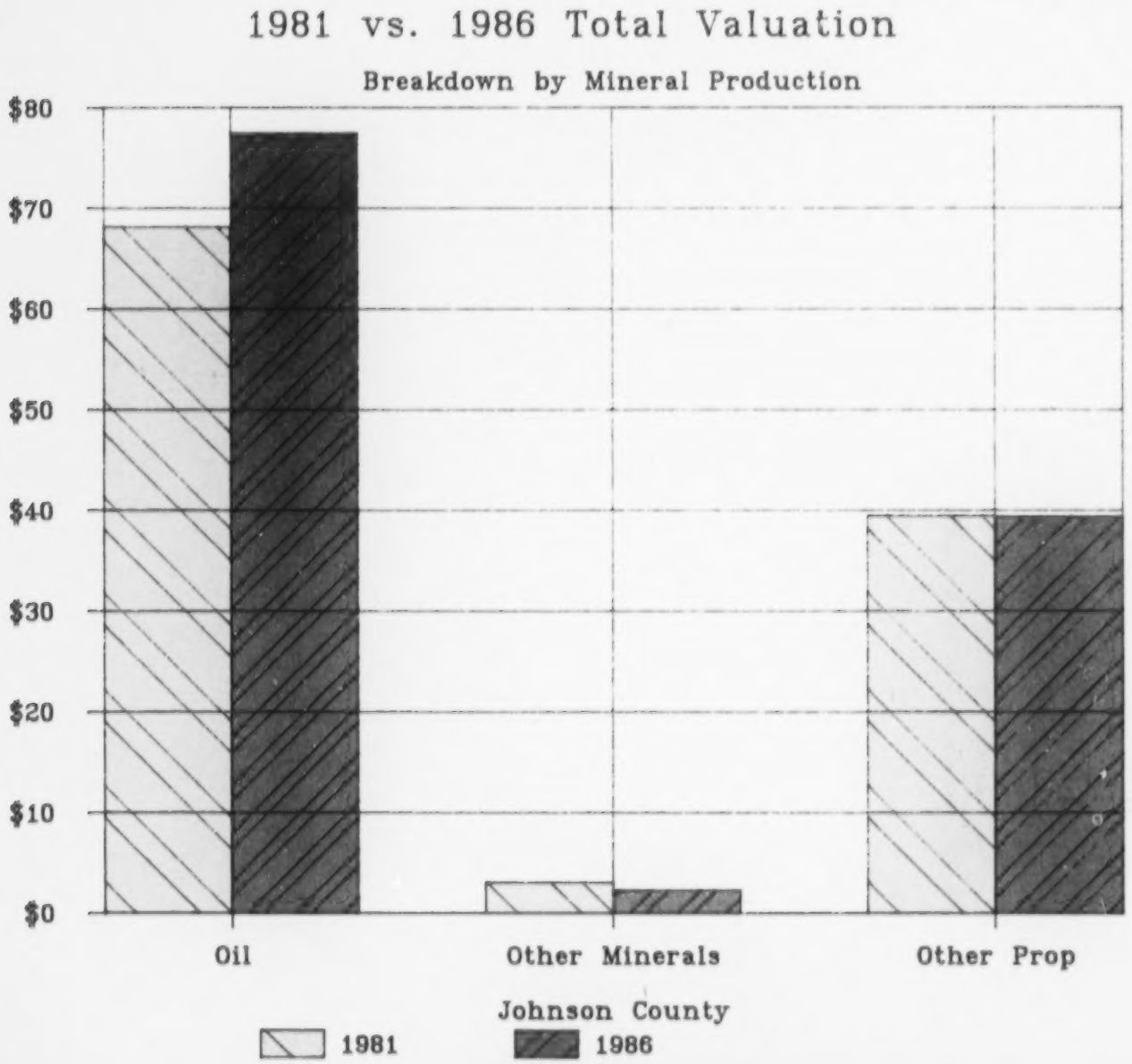
Natural gas production in the county dropped by nearly 200,000 MCF and similar fluctuations are likely to continue.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$210
$200
$190
$180
$170
$160
$150
$140
$130
$120
$110
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
Oil
Other Prop
Hot Springs County
1981
1986

JOHNSON COUNTY

Oil accounted for 97% of Johnson County's mineral valuation in 1985. This was an increase of over 250,000 barrels from 1984. Valuation did not increase proportionately, however, due to a $2.21 drop in unit valuation.

Other significant mineral products of the county were 520,000 MCF of gas and 255,000 tons of bentonite. Both totals are decreases over 1984 figures.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
$80
$70
$60
$50
$40
$30
$20
$10
$0
(Millions)
Oil
Other Minerals
Other Prop
Johnson County
1981
1986

LARAMIE COUNTY

In 1985 oil production accounted for 89% of Laramie County's mineral valuation, with construction materials accounting for all the rest except for a small amount of natural gas.

Oil production in the county rose by 21,000 barrels, unfortunately coupled with a valuation decrease of $3.31 per barrel.

The county total of 1,741,915 dollars for construction material valuation reflects continued MX related development in the county.

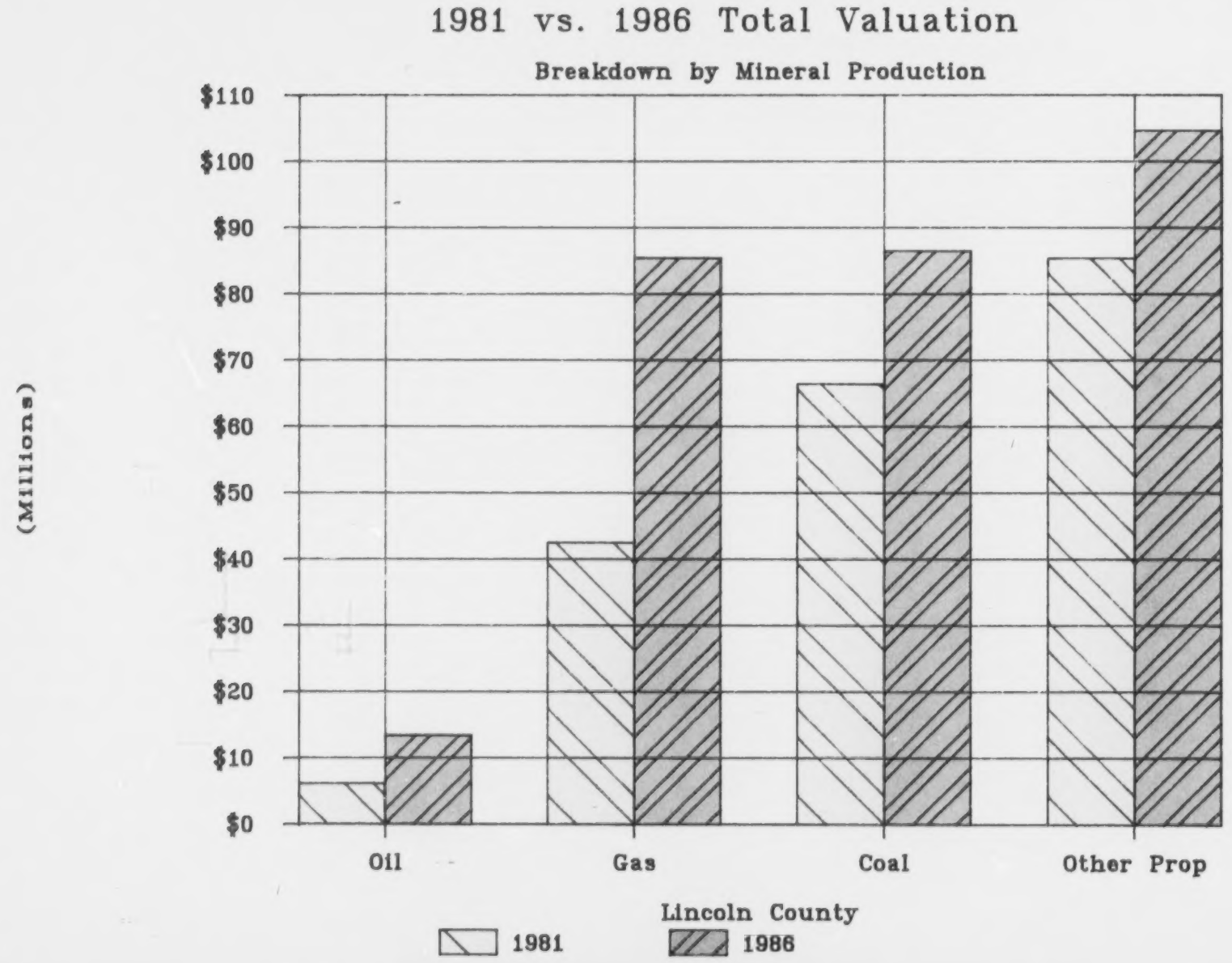
LINCOLN COUNTY

Natural gas accounted for almost 50% of Lincoln County's 185.5 million dollar mineral valuation in 1986. The county's location on the eastern edge of the Overthrust Belt accounts for its large and rising gas production.

Lincoln County has been a coal producer for 110 years. In 1985, 4,320,000 tons were mined, a small increase over 1984. Additional production from the FMC Skull Point Mine and possibly a Rocky Mountain Energy operation should raise this total in future years.

County oil production fell to 539,375 barrels in 1985. This decrease reflected slowing drilling activity in response to price decreases.

The Exxon LaBarge Project has begun production, and will spark a rise in Lincoln County gas output.

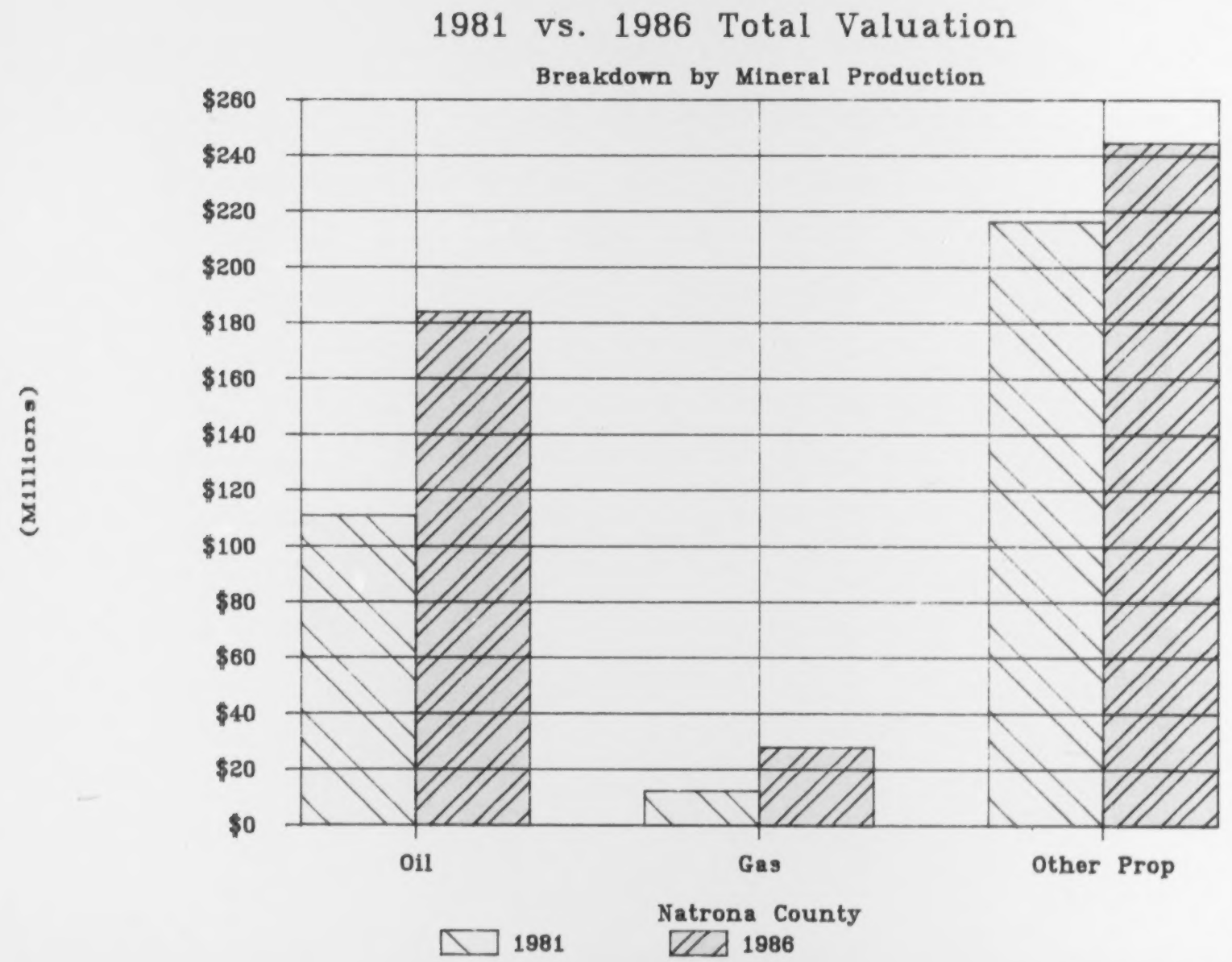

1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$110
$100
$90
$80
$70
$60
$50
$40
$30
$20
$10
$0
Oil
Gas
Coal
Other Prop
Lincoln County
1981
1986

NATRONA COUNTY

Oil production in Natrona County increased by nearly 4,000,000 barrels in 1985. A sharp drop in unit valuation of almost $12.00 resulted in a gain of only 12 million dollars in valuation. This downward trend in valuation portends a similar fate for other counties.

Bentonite production rose to 65,663 tons. Considering the wide fluctuations in the bentonite industry, no trends are discernable.

Other county mineral products are sodium sulfate and construction materials.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$260
$240
$220
$200
$180
$160
$140
$120
$100
$80
$60
$40
$20
$0
Oil
Gas
Other Prop
Natrona County
1981
1986

NIOBRARA COUNTY

Niobrara County's most important mineral commodity is crude oil. In 1985 crude oil accounted for 96% of the county's mineral valuation and 57% of its total valuation. Production fell slightly from 1,041,252 to 956,203 barrels, and a unit value decline of $2.63 was reflected in a valuation drop of nearly 5 million dollars.

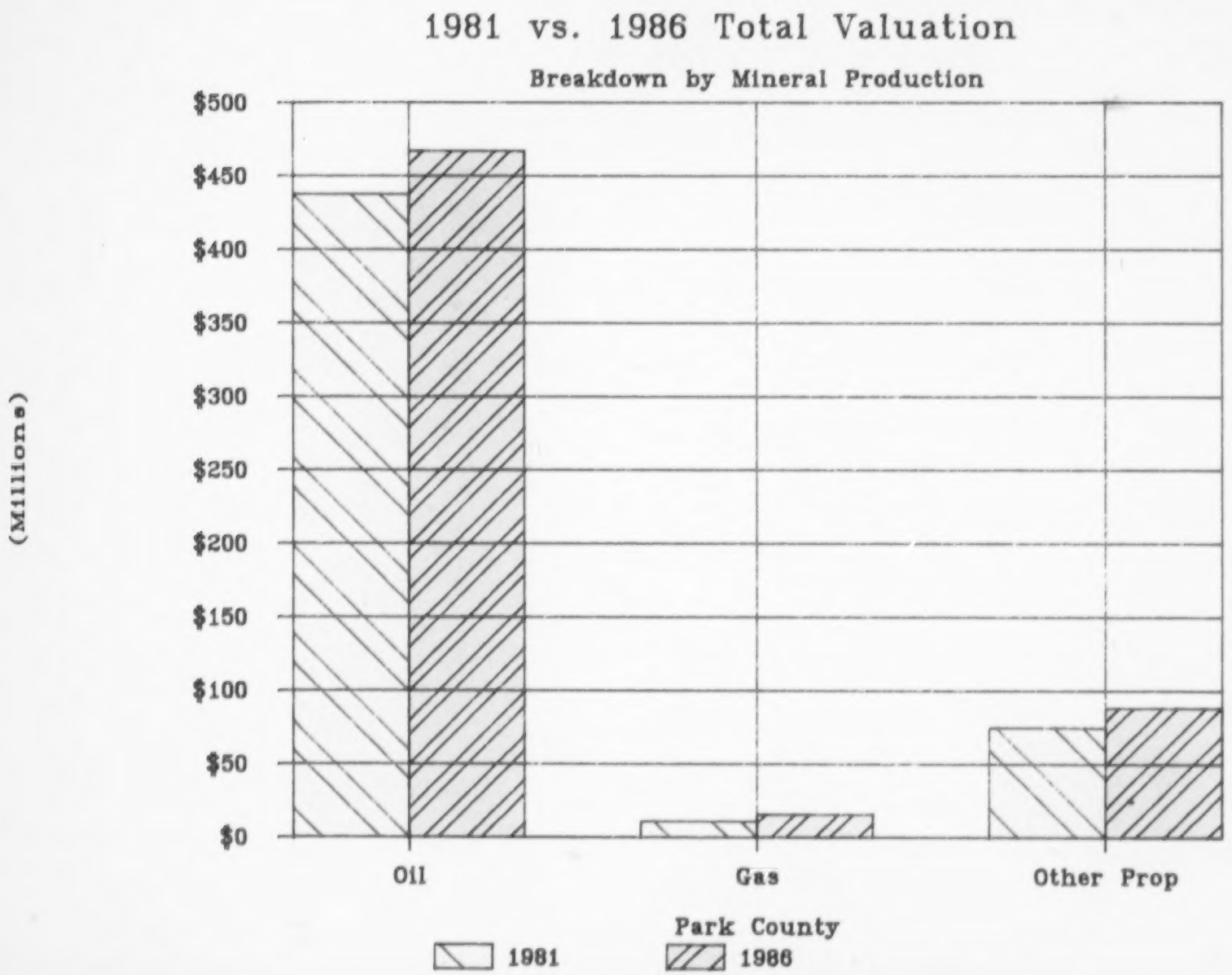
Natural gas production held almost steady, but a quantity as small as 323,000 MCF cannot reliably indicate longer range trends.

PARK COUNTY

Park County was in second place behind Campbell County in 1985 with an output of 20,245,000 barrels. This was an increase of 55,000 barrels compared to 1984. Production will continue to decline as old giant fields like Oregon Basin continue to be depleted, regardless of market conditions. Oil production accounted for 96% of the county's mineral valuation and 83% of total valuation. Unit valuation fell by $.77 per barrel.

Gas production declined by 1.2 million MCF.

Gypsum production was 172,000 tons in 1985.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$500
$450
$400
$350
$300
$250
$200
$150
$100
$50
$0
Oil
Gas
Other Prop
Park County
1981
1986

PLATTE COUNTY

The county's mineral valuation, $1,902,628, comes from Guernsey Stone's dolomite quarry, Basin Engineering's marble quarry and various sand and gravel operations.

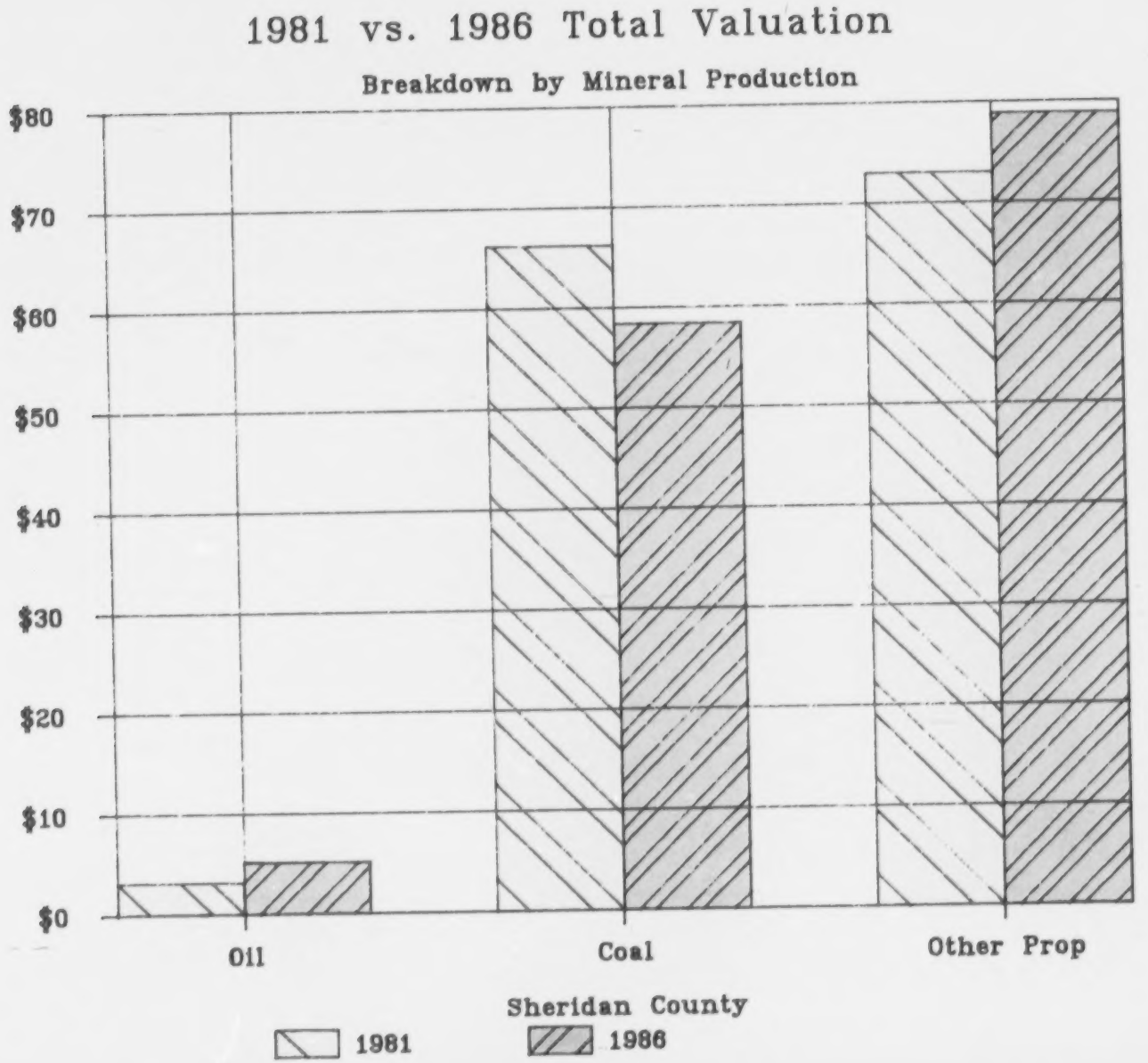
SHERIDAN COUNTY

Coal production in Sheridan County fell by 130,000 tons in 1985. This resulted in a drop of 6 million dollars in mineral valuation. Unit valuation decreased by $.73 per ton.

All but 715 tons of the county's production came from Peter Kiewit Sons' Big Horn Mine. The Big Horn Mine has announced that it will close when its contract with Commonwealth Edison expires at the end of 1988. If it takes place as reported, this closure will have a profound effect on Sheridan County. Ninty-two percent of the mineral valuation and 45% of the total valuation of the county come from this mine's production, to say nothing of property taxes, job losses, and so on.

Sheridan County's oil production increased slightly by 27,000 barrels in 1985, but a decline has commenced and will continue.

Construction materials, including scoria, accounted for 106,000 dollars of valuation.

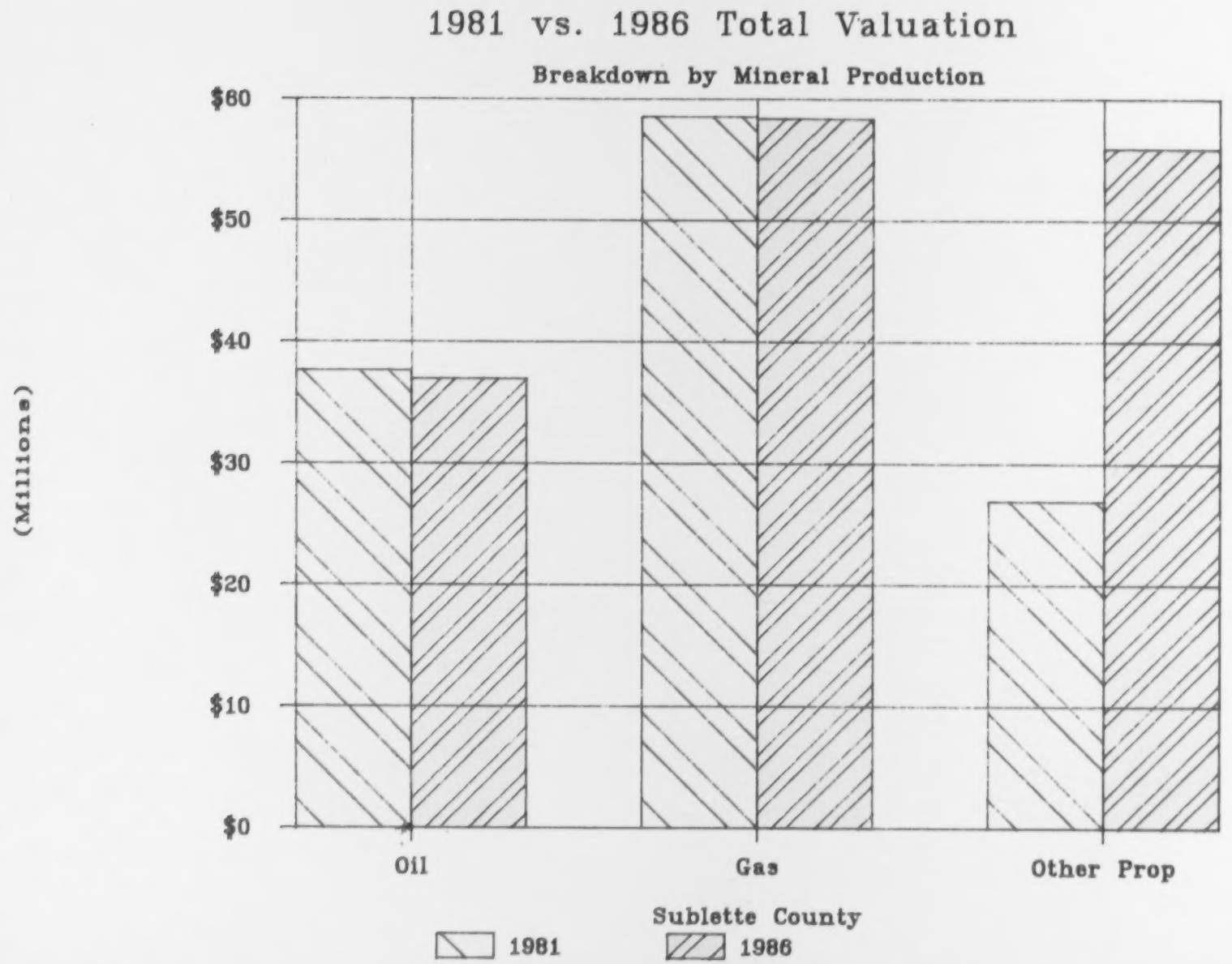

1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
$80
$70
$60
$50
$40
$30
$20
$10
$0
(Millions)
Oil
Coal
Other Prop
Sheridan County
1981
1986

SUBLETTE COUNTY

Natural gas was Sublette County's most important mineral product in 1985, with over 58 million MCF produced with a valuation of over 83 million dollars. Both of those figures show significant gains over 1983.

As the Riley Ridge Project comes on line Sublette County's gas production will show dramatic increases.

Oil production declined in 1985 with a loss of 21 million barrels. Liquids stripped at the new processing plants, plus the possibility of new Overthrust discoveries, should slow this downward trend.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
$60
$50
$40
$30
$20
$10
$0
(Millions)
Oil
Gas
Other Prop
Sublette County
1981
1986

SWEETWATER COUNTY

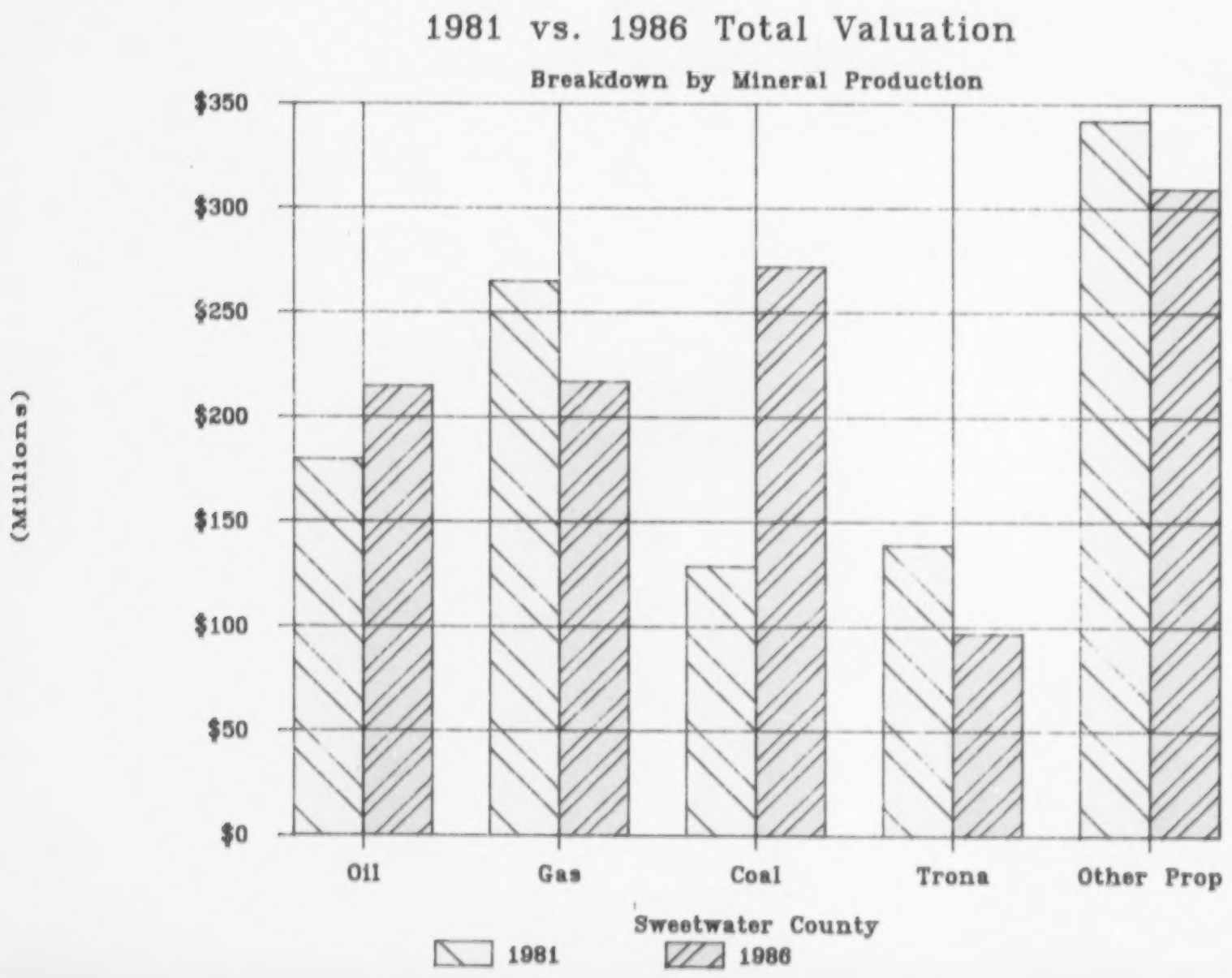
Sweetwater County has significant production of oil, gas, coal, and trona and these plus sand and gravel combine for a total valuation on production of over 801 million dollars, second largest in the State.

Natural gas is the most valuable product, accounting for one third of the mineral valuation and 23% of the total valuation. Production in 1985 was down nearly 19 million MCF. New field discoveries should at least maintain previous production levels.

Crude oil is the second most valuable mineral commodity in the county, accounting for 27% of the mineral valuation and 19% of the total valuation.

Sweetwater County is the second largest coal producer in the State, although it is far behind Campbell County. Production of 8,300,000 tons was responsible for 34% of the county mineral valuation in 1985.

Trona is produced only in Sweetwater County, and is fourth behind oil, gas, and coal in valuation at 96,389,980 dollars. Production was down by over 300,000 tons in 1985, but price increases raised the total valuation to 96,390,000 dollars. The domestic trona market is saturated, and new applications or foreign markets must be exploited for this industry to expand.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$350
$300
$250
$200
$150
$100
$50
$0
Oil
Gas
Coal
Trona
Other Prop
Sweetwater County
1981
1986

TETON COUNTY

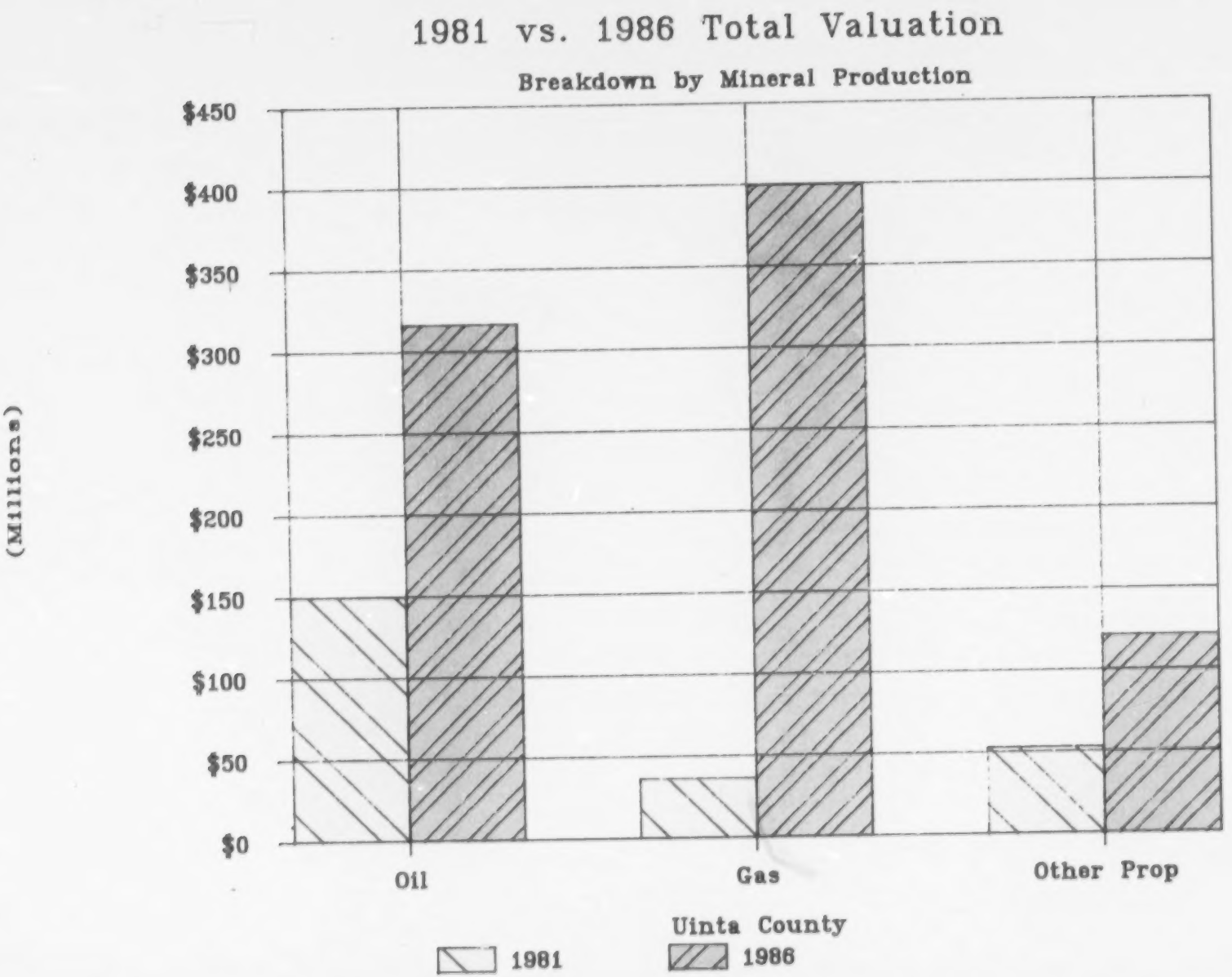
Teton County is the only county in Wyoming which had no oil or gas production in 1985. A number of exploration leases and permits have been let in the county, and several wells have been drilled in the past but whether any production will result from this activity remains to be seen.

The only minerals produced in Teton County in 1985 were 179,052 dollars worth of sand and gravel.

UINTA COUNTY

Uinta County has been the main benefactor of Overthrust Belt oil and gas activity. In 1970 the county produced 31,000 barrels of crude oil while in 1985 the total was 13,714,256 barrels, third in the State behind Campbell and Park Counties. The increase in natural gas production has been as dramatic, from 3.4 million MCF to 116 million MCF, the largest total in the State. Uinta County valuation on oil and gas production was 87% of the total county valuation in 1985. These figures will turn downward sharply when collapsing oil prices make their pressure felt.

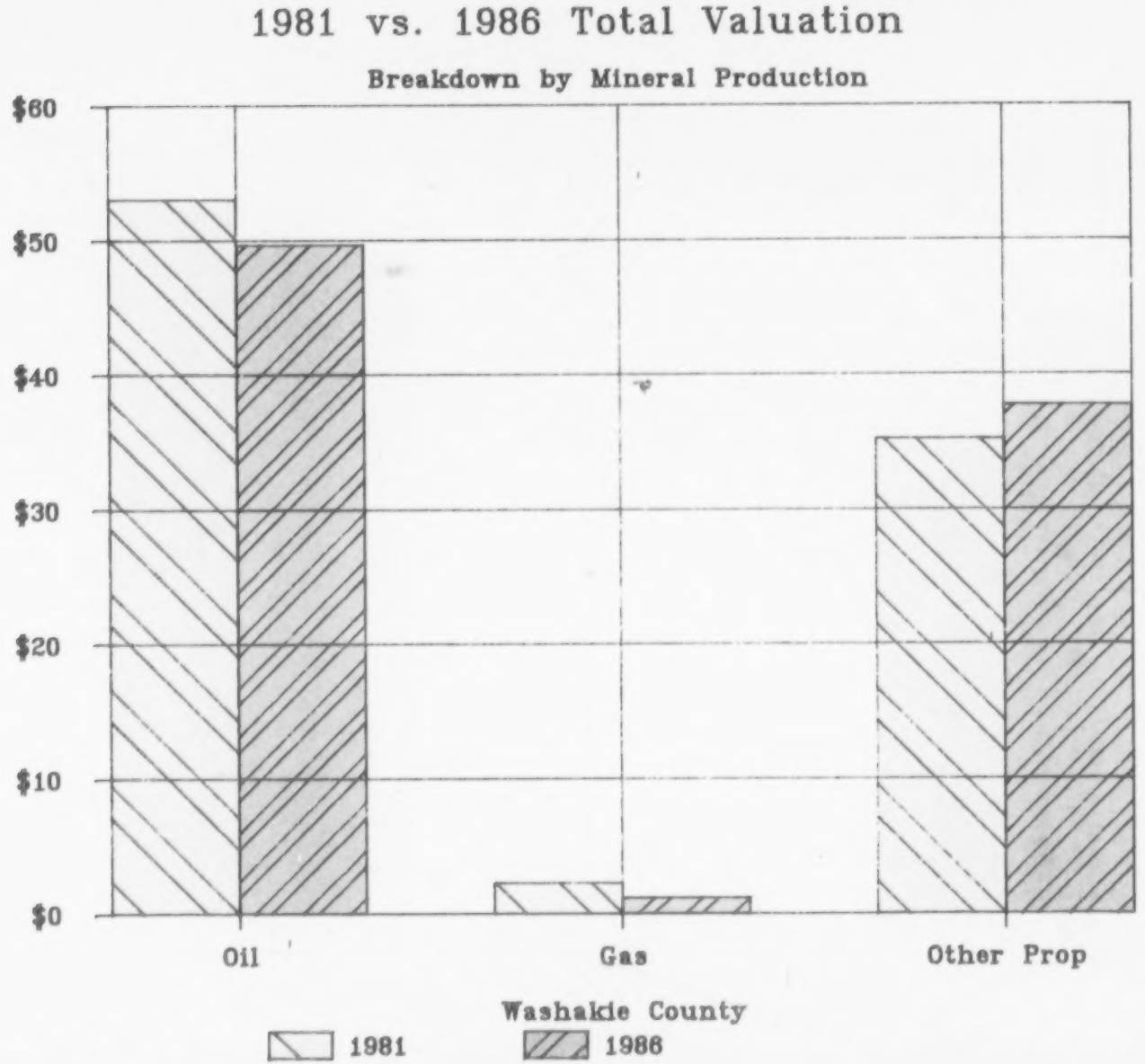
Construction materials valuation was 538,544 dollars in 1985, the large figure reflecting the last phases of energy construction in the county.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$450
$400
$350
$300
$250
$200
$150
$100
$50
$0
Oil
Gas
Other Prop
Uinta County
1981
1986

WASHAKIE COUNTY

Oil production showed an increase of 73,000 barrels in 1985. Natural gas production dropped by over 500,000 MCF.

County bentonite production was down 100,000 tons in 1985, paralleling the State trend. Considering the volatility of the bentonite market, predicting future tendencies is largely impossible.

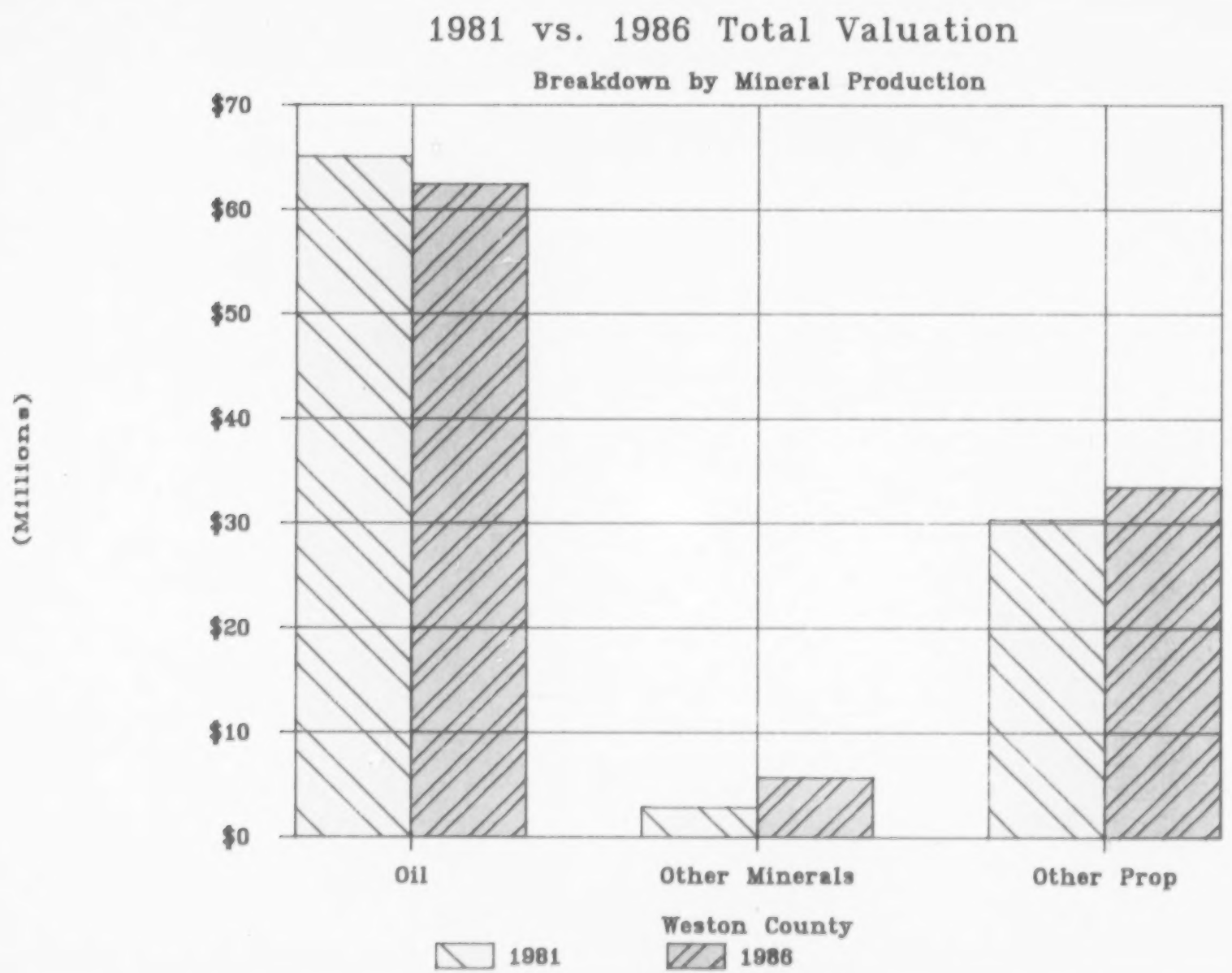

1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$60
$50
$40
$30
$20
$10
$0
Oil
Gas
Other Prop
Washakie County
1981
1986

WESTON COUNTY

Oil production in the county dropped by 344,000 barrels in 1985, continuing a trend first appearing in the 1960's. Considering the age of Weston County's oil fields alone, let alone world markets no reversal of this downward slope is likely.

Natural gas production rose by over 332,000 MCF, but unit valuation fell by .38 cents.

Bentonite production in the county rose from 128 thousand to 148 thousand tons, despite the statewide decline. Availability and accessibility of deposits was the major contributor to this increase.


1981 vs. 1986 Total Valuation
Breakdown by Mineral Production
(Millions)
$70
$60
$50
$40
$30
$20
$10
$0
Oil
Other Minerals
Other Prop
Weston County
1981
1986

WYOMING MINERAL PRODUCTION AND VALUATION

1981-1986

1981 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	155,375							15,384
Big Horn	5,313,639	3,238,237				1,557,955		149,696
Campbell	20,228,422	16,212,571	68,066,432	In situ				
Carbon	3,233,985	52,026,038	8,352,914	904,642				
Converse	6,588,690	12,189,486	3,219,001	1,298,808				
Crook	2,649,734	125,662				1,896,932		
Fremont	6,165,686	52,517,672		1,183,405	4,667,292			
Goshen	1,431							
Hot Springs	9,149,952	155,076	35,617			122,702		
Johnson	2,667,111	1,272,929		In situ		277,014		
Laramie	234,215							
Lincoln	236,584	24,960,246	4,997,142					
Natrona	6,897,806	5,998,034		201,971		75,059		
Niobrara	1,384,442	126,423						
Park	22,642,100	6,163,521				41,263		118,597
Platte								
Sheridan	169,494	32,639	2,736,409					
Sublette	1,751,963	38,166,533						
Sweetwater	9,270,498	110,756,980	11,003,007	971,855			11,787,731	
Teton								
Uinta	8,425,274	24,887,910						
Washakie	2,344,484	3,445,712				251,360		
Weston	2,401,715	800,383				582,720		
TOTAL	111,912,600	353,076,052	98,410,522	4,560,683	4,667,292	4,805,005	11,787,731	283,677

1982 Assessed Valuation
on
1981 Production

County	Oil	Gas	Coal	Uranium	Iron Ore	Bentonite	Trona	Misc.	Total
Albany	$ 5,354,264	$	$	$	$	$	$	$ 1,705,649	$ 7,059,913
Big Horn	159,220,581	8,668,272				6,184,587		462,838	174,970,396
Campbell	665,551,293	36,144,672	508,381,871	116,730				193,397	1,210,393,963
Carbon	111,712,063	186,661,292	158,519,134	43,170,592				58,284	500,121,355
Converse	234,060,727	31,633,649	18,679,206	13,355,920				104,862	297,725,364
Crook	84,631,167	39,045				8,780,809		261,275	93,216,462
Fremont	192,734,243	140,188,520		16,503,479	18,202,439			245,454	367,874,135
Goshen	51,497							373,136	424,633
Hot Springs	278,589,311	336,150	617,955			490,808		19,949	280,054,173
Johnson	89,813,437	2,782,158		91,074		837,400		225,378	93,759,447
Laramie	8,371,335							2,606,254	10,977,589
Lincoln	7,574,444	73,599,211	77,600,124					229,489	159,003,268
Natrona	234,571,192	19,109,848		3,528,292		304,835		753,431	258,267,598
Niobrara	48,310,067	72,109						46,450	48,428,626
Park	666,933,790	13,575,848				138,231		443,020	681,240,864
Platte								1,538,934	1,538,194
Sheridan	5,873,208	77,380	54,454,539					311,544	60,716,671
Sublette	60,807,536	64,566,069						10,871	125,384,476
Sweetwater	317,943,973	318,836,403	171,451,863	573,394			147,417,617	309,700	956,531,950
Teton								126,720	126,720
Uinta	277,534,024	77,787,956						574,131	355,896,111
Washakie	74,193,491	2,228,115				741,512		56,168	77,219,286
Weston	86,264,521	2,251,284				3,398,202		15,842	91,929,849
Total	3,610,096,154	978,556,981	989,699,692	77,239,481	18,202,439	20,876,884	147,417,617	10,678,776	5,852,764,024
% of Total	61	17	17	1	.35	.40	3	.25	

1982 Unit Valuation

County	Oil $/bbls	Gas $/MCF	Coal $/tons	Uranium $/tons	Iron Ore $/tons	Bentonite $/tons	Trona $/tons	Gypsum $/tons
Albany	$34.46	$	$	$	$	$	$	$1.75
Big Horn	29.96	2.68				3.97		2.90
Campbell	32.90	2.23	7.47	In situ				
Carbon	34.54	3.59	18.98	47.72				
Converse	35.52	2.60	5.80	10.21				
Crook	31.94	.31				4.63		
Fremont	31.26	2.67		13.95	3.90			
Goshen	35.99							
Hot Springs	30.45	2.17	17.35			4.00		
Johnson	33.67	2.19		In situ		3.02		
Laramie	35.74							
Lincoln	32.02	2.95	15.53					
Natrona	34.01	3.19		17.47		4.06		
Niobrara	34.89	.57						
Park	29.46	2.20				3.35		2.90
Platte								
Sheridan	34.65	2.37	19.90					
Sublette	34.71	1.69						
Sweetwater	34.30	2.88	15.58	.59			12.51	
Teton								
Uinta	32.94	3.13						
Washakie	31.65	.66				2.95		
Weston	35.92	2.81				5.83		
State Average	$32.26	$2.77	$10.06	$16.89	$3.90	$4.34	$12.51	$2.84
Increase or Decrease Over	+$11.95	+$.85	+$1.51	+$.10	+$.08	+$.86	+$1.08	---

1982 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	143,602							19,237
Big Horn	5,265,632	3,569,873				872,623		119,707
Campbell	20,221,550	17,188,170	77,927,442	611,684				
Carbon	2,846,347	47,175,586	5,052,927					
Converse	6,282,905	10,229,672	2,821,931	1,326,504*				
Crook	2,944,382	63,253				947,008		
Fremont	5,618,212	55,129,543		808,687	3,276,005			
Goshen	14,060							
Hot Springs	8,514,553	198,545	66,711			67,707		
Johnson	2,400,517	837,145				175,133		
Laramie	279,116							
Lincoln	240,021	21,937,007	4,314,363					
Natrona	6,806,895	8,303,298		167,335		55,730		
Niobrara	1,234,192	503,039						
Park	21,975,838	5,072,918				7,173		124,049
Platte								
Sheridan	231,030	22,004	3,002,677					
Sublette	1,593,581	39,564,219						
Sweetwater	8,737,658	104,279,682	10,828,045	981,39*			10,073,690	
Teton								
Uinta	7,934,059	32,929,608						
Washakie	2,057,877	2,594,322				80,474		
Weston	2,713,435	1,594,853				140,066		
Total	108,055,462	351,192,737	104,014,096	3,895,510	3,276,005	2,345,914	10,073,690	262,993

*Includes 1,795,348 tons of ore listed as clean-up (and not totaled) by Department of Revenue and Taxation Ad Valorem Tax Division

1983 Assessed Valuation
on
1982 Production

County	Oil	Gas	Coal	Uranium	Iron Ore	Bentonite	Trona	Misc.	Total
Albany	$ 4,275,672	$	$	$	$	$	$	$ 860,260	$ 5,135,932
Big Horn	142,682,163	9,519,109				3,730,503		384,203	156,315,978
Campbell	615,772,477	38,907,822	634,464,846	5,269				246,654	1,289,397,068
Carbon	89,544,572	197,236,182	121,047,062	31,874,429				93,239	439,795,484
Converse	204,076,451	26,369,229	17,354,876	5,485,464				116,060	253,402,080
Crook	81,470,049	12,311				3,889,599		214,604	85,586,563
Fremont	160,126,236	208,304,791		7,033,560				137,971	387,068,576
Goshen	441,575							725,018	1,166,593
Hot Springs	233,566,723	420,205	950,632			267,443		15,002	235,220,005
Johnson	73,574,288	2,028,246				583,624		144,695	76,330,853
Laramie	9,042,490							1,534,884	10,577,374
Lincoln	7,211,334	78,682,018	76,821,811					100,545	162,815,708
Natrona	214,618,580	33,284,192		1,079,761		224,282		606,284	249,832,099
Niobrara	39,705,188	1,309,469						19,020	41,033,677
Park	586,049,250	15,987,010				31,920		454,155	602,522,335
Platte								1,153,363	1,153,363
Sheridan	7,279,845	57,290	62,742,657					253,082	70,332,875
Sublette	50,965,300	73,243,219						14,864	124,223,383
Sweetwater	274,723,792	337,876,912	200,263,256	78,511			121,583,686	229,532	934,755,689
Teton								144,509	144,509
Uinta	240,890,894	102,486,414						944,184	344,321,492
Washakie	58,373,862	1,809,826				197,161		26,542	60,407,391
Weston	87,997,720	4,517,197				688,634		60,952	93,264,503
Total	3,182,388,462	1,132,051,442	1,113,645,140	45,555,994	11,466,018	9,613,166	121,583,686	8,498,601	5,624,803,530
% of Total	57	20	20	1	--	--	2	--	

1983 Unit Valuation

County	Oil $/bbls	Gas $/MCF	Coal $/tons	Uranium $/tons	Iron Ore $/tons	Bentonite $/tons	Trona $/tons	Gypsum $/tons
Albany	$29.77	$	$	$	$	$	$	$1.75
Big Horn	27.10	2.67				4.28		2.90
Campbell	27.79	2.26	8.14					
Carbon	31.46	4.18	23.96	52.10				
Converse	32.48	2.58	6.15	9.88+clean-up*				
Crook	27.67	.19				4.11		
Fremont	28.50	3.78		8.55	3.50			
Goshen	31.41							
Hot Springs	27.43	2.12	14.25			3.95		
Johnson	30.65	2.42				3.33		
Laramie	32.40							
Lincoln	30.04	3.59	17.81					
Natrona	31.53	4.00		6.37		4.02		
Niobrara	32.17	2.60						
Park	26.67	3.15				4.45		2.90
Platte								
Sheridan	31.51	2.60	20.90					
Sublette	31.98	1.85						
Sweetwater	31.44	3.24	18.49	clean-up*			12.07	
Teton								
Uinta	30.36	3.11						
Washakie	28.37	.70				2.45		
Weston	32.43	2.83				4.92		
State Average	$29.45	$3.22	$10.71	$21.69	$3.50	$4.10	$12.07	$2.82
Increase or Decrease Over	-$2.81	+$.45	+$.55	+$4.80	-$.40	-$.24	-$.44	-$.02

*Unit valuations for clean-up operations are low and are not included.

1983 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	142,134							15,954
Big Horn	4,885,623	2,206,205				442,310		149,501
Campbell	21,020,277	22,742,258	84,693,794					
Carbon	2,276,002	33,073,794	4,698,511	477,281				
Converse	5,656,935	9,700,928	2,176,113	1,222,423				
Crook	3,181,240	72,495				1,206,893		
Fremont	5,630,804	44,009,029		780,021	2,478,371			
Goshen	15,271							
Hot Springs	7,931,758	245,571	45,107			58,079		
Johnson	2,603,755	678,616				257,666		
Laramie	376,072							
Lincoln	387,109	24,909,235	4,040,464					
Natrona	7,115,626	6,146,366		183,447		65,320		
Niobrara	1,165,753	558,106						
Park	21,371,025	4,923,466						162,187
Platte								
Sheridan	183,928		2,922,014					
Sublette	1,553,027	37,115,648						
Sweetwater	8,820,056	91,672,428	9,326,761	385,196			10,542,417	
Teton								
Uinta	11,380,840	113,679,953						
Washakie	1,871,177	2,328,655				46,977		
Weston	2,852,569	1,593,794				154,751		
Total	110,420,981	395,656,547	107,902,764	3,049,068	2,478,371	2,183,865	10,542,417	327,642

1984 Assessed Valuation

on

1983 Production

County	Oil	Gas	Coal	Uranium	Iron Ore	Bentonite	Trona	Misc.	Total
Albany	3,850,475							835,224	4,715,219
Big Horn	120,448,360	6,359,299				1,891,719			129,233,521
Campbell	588,720,661	66,198,168	656,110,780					111,948	1,313,742,556
Carbon	63,867,628	140,677,065	126,709,025	31,662,628				389,358	363,809,704
Converse	169,327,488	29,218,371	13,383,095	8,966,381				284,549	225,219,832
Crook	81,439,317	20,526				5,669,485			87,819,100
Fremont	146,369,071	179,911,069		8,156,276	7,435,113			210,863	342,081,392
Goshen	455,931							207,484	663,415
Hot Springs	196,814,953	617,136	778,096			217,796			198,681,350
Johnson	73,372,145	1,917,992				139,922			76,282,919
Laramie	11,319,085							1,767,431	13,086,516
Lincoln	8,972,770	96,767,928	79,611,688					214,618	183,567,004
Natrona	207,261,681	21,788,770		2,220,953		129,870			231,070,629
Niobrara	34,243,696	1,477,312						596,834	36,317,842
Park	516,936,803	13,319,304							530,734,962
Platte								1,425,928	1,425,928
Sheridan	5,430,457		68,926,516					138,725	74,446,134
Sublette	46,159,909	78,318,365						33,451	124,512,123
Sweetwater	254,396,895	259,309,594	203,328,935	30,816			104,900,003	158,871	815,925,113
Teton								120,020	120,020
Uinta	322,091,317	362,100,919						626,048	684,818,284
Washakie	48,162,698	1,981,238				176,838			50,143,518
Weston	86,053,595	5,528,921				171,191			91,930,309
Total	2,986,418,934	1,258,272,277	1,151,058,135	50,837,054	7,435,113	3,746,821	104,900,003	9,521,851	5,577,786,192
% of Total	54	22	20	1	.01	.03	2	.03	

1984 Unit Valuation

County	Oil $/bbls	Gas $/MCF	Coal $/tons	Uranium $/tons	Iron Ore $/tons	Bentonite $/tons	Trona $/tons	Gypsum $/tons
Albany	27.09					4.28		1.85
Big Horn	24.65	2.88						3.00
Campbell	28.01	2.94	7.77					
Carbon	28.84	4.25	26.97	65.92				
Converse	29.76	3.02	6.15	7.33				
Crook	25.60	.28				4.70		
Fremont	25.99	4.09		10.45	3.00			
Goshen	29.80							
Hot Springs	24.81	2.51	17.25			3.75		
Johnson	28.18	2.84						
Laramie	30.08							
Lincoln	23.18	3.80	19.70					
Natrona	29.12	3.55		12.11		5.05		
Niobrara	29.37	2.65						
Park	24.19	2.66						3.00
Platte								
Sheridan	29.52		23.59					
Sublette	29.72	2.11						
Sweetwater	28.84	2.77	21.82	.08			9.91	
Teton								
Uinta	28.30	3.19						
Washakie	25.74	.76				2.70		
Weston	30.17	3.16				4.98		
State Average	27.04	3.18	10.67	16.67	3.00	4.46	9.91	2.94
Increase or Decrease Over	-$2.41	+$.04	-$.04	-$5.02	-$.050	+$0.36	-$2.16	+$0.12

1984 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	146,587							13,176
Big Horn	5,223,277	1,687,091				949,113		159,730
Campbell	23,907,964	31,151,648	102,779,093					
Carbon	2,552,864	46,292,397	5,081,638	473,556				
Converse	8,098,349	10,502,161	2,675,630	542,662				
Crook	4,196,033	67,057				1,508,574		
Fremont	5,242,880	39,504,795		619,908				
Goshen	15,472							
Hot Springs	7,951,624	295,865	42,578					
Johnson	2,756,696	649,711				290,848		
Laramie	559,992	66,702						
Lincoln	552,456	28,101,192	4,070,071					
Natrona	6,906,009	7,512,429				30,033		
Niobrara	1,041,252	353,028						
Park	19,999,970	6,875,358				927		152,776
Platte	199							
Sheridan	176,783		2,531,470					
Sublette	1,535,363	39,347,573						
Sweetwater	9,027,839	99,164,942	8,750,975				10,971,209	
Teton								
Uinta	12,674,088	132,091,642						
Washakie	1,943,938	2,468,899				175,404		
Weston	2,779,933	1,482,805				128,425		
Total	117,289,568	447,615,295	125,931,455	1,634,262		3,083,324	10,971,209	225,682

1985 Assessed Valuation
on
1984 Production

County	Oil	Gas	Coal	Uranium	Iron Ore	Bentonite	Trona	Misc.	Total
Albany	3,799,760							985,447	4,785,207
Big Horn	127,436,160	4,818,245				4,289,489		583,214	137,127,108
Campbell	662,235,907	101,115,514	741,382,685					299,257	1,505,033,363
Carbon	71,758,227	205,245,306	129,817,519	19,050,265				281,196	426,152,513
Converse	236,842,608	33,233,768	15,919,999	663,365*				237,202	286,896,942
Crook	106,432,368	18,686				7,131,676		189,618	113,771,898
Fremont	135,586,297	152,070,988		2,037,271				151,539	289,846,095
Goshen	451,292							237,197	688,489
Hot Springs	195,430,483	796,383	742,986					36,026	197,005,878
Johnson	75,741,509	2,092,714				1,119,764		178,654	79,132,641
Laramie	16,270,544	143,464						2,224,427	18,638,435
Lincoln	13,336,422	110,741,244	82,099,203					112,201	206,289,070
Natrona	196,309,075	25,819,408				115,627		416,945	222,661,055
Niobrara	29,200,311	1,026,646						2,329,145	32,556,102
Park	476,860,428	21,776,213						635,573	499,272,214
Platte	5,929							1,537,383	1,543,312
Sheridan	4,962,760		64,411,755					121,408	69,495,923
Sublette	43,913,790	83,482,514						137,593	127,533,897
Sweetwater	254,065,361	265,003,530	196,543,308				95,792,777	558,708	811,963,684
Teton								82,987	82,987
Uinta	346,952,770	471,003,183						679,362	818,635,315
Washakie	49,520,424	1,686,133				410,960		47,553	51,665,070
Weston	81,051,919	4,656,864				1,037,003		104,162	86,849,948
Total	3,128,144,344	1,484,730,803	1,230,917,455	21,750,901*		14,108,737	95,792,777	12,162,129	5,987,627,146
% of Total	52	24.8	20.9	.3		.2	1.6	.2	

*Includes in-situ

1985 Unit Valuation

County	Oil $/bbls	Gas $/MCF	Coal $/tons	Uranium $/tons	Iron Ore $/tons	Bentonite $/tons	Trona $/tons	Gypsum $/tons
Albany	25.92							1.85
Big Horn	24.40	2.86				4.52		3.25
Campbell	27.70	3.25	7.21					
Carbon	28.11	4.43	25.55	40.23				
Converse	29.25	3.16	5.95	1.22				
Crook	25.37	.28				4.73		
Fremont	25.85	3.85		3.29				
Goshen	29.17							
Hot Springs	24.58	2.69	17.45					
Johnson	27.48	3.22				3.85		
Laramie	29.06	2.15						
Lincoln	24.14	3.94	20.17					
Natrona	28.43	3.44				3.85		
Niobrara	28.04	2.91						
Park	23.84	3.17						3.25
Platte	29.79							
Sheridan	28.07		25.44					
Sublette	28.60	2.12						
Sweetwater	28.14	2.67	22.46				8.73	
Teton								
Uinta	27.38	3.57						
Washakie	25.47	.68				2.51		
Weston	29.16	3.14				8.07		
State Average	26.67	3.32	9.77	13.31		4.58	8.73	2.95
Increase or Decrease Over	-.37	+.14	-.90	-3.36		+.12	-1.18	+.01

1985 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	153,666							
Big Horn	4,654,964	1,447,968				901,561		175,512
Campbell	24,825,561	25,915,533	109,202,078					
Carbon	2,661,154	45,715,485	3,180,375	241,057				
Converse	8,888,482	33,202,177	3,151,197	225,323				
Crook	5,487,568	66,652				1,176,096		
Fremont	4,859,046	39,721,326		153,587				
Goshen	23,417							
Hot Springs	7,211,881	218,489	31,208					
Johnson	2,065,602	520,366				254,831		
Laramie	580,271	64,969						
Lincoln	539,375	23,639,001	4,320,225					
Natrona	10,833,972	7,811,090						
Niobrara	956,203	323,606						
Park	20,245,002	5,650,095				927		172,652
Platte								
Sheridan	213,002	9,926	2,362,539					
Sublette	1,479,452	27,180,096						
Sweetwater	8,307,887	80,251,435	12,857,582				10,776,304	
Teton								
Uinta	13,714,256	116,540,107						
Washakie	2,036,387	1,927,947				72,556		
Weston	2,435,386	1,820,346				148,642		
Total	122,172,534	412,026,614	135,105,204	619,967		2,554,613	10,776,304	348,164

1986 Assessed Valuation
on
1985 Production

County	Oil	Gas	Coal	Uranium	Iron Ore	Bentonite	Trona	Misc.	Total
Albany	3,791,481							93,079	3,884,560
Big Horn	109,186,837	3,444,591				3,586,624		608,765	116,826,819
Campbell	599,786,073	63,709,828	736,704,572					91,993	1,400,292,466
Carbon	67,962,049	167,596,863	83,053,397	12,101,697				362,620	326,076,626
Converse	228,999,961	40,639,795	18,952,799	4,357,686				126,106	293,076,347
Crook	128,537,254	19,048				3,444,670		374,925	132,375,897
Fremont	116,801,851	149,013,458		454,771				118,060	266,388,142
Goshen	601,758							74,279	676,037
Hot Springs	171,621,268	585,372	611,365					24,662	172,842,667
Johnson	77,463,336	1,557,267				554,770		186,490	79,761,863
Laramie	14,944,512	103,646						1,741,915	16,790,073
Lincoln	13,349,400	85,430,430	86,523,549					209,837	185,513,216
Natrona	184,112,301	28,070,415				65,663		335,266	212,583,645
Niobrara	24,297,305	949,871						48,729	25,296,105
Park	467,007,353	15,843,071				17,208		839,922	483,707,554
Platte								1,902,628	1,902,628
Sheridan	5,139,091	24,391	58,388,953					106,661	63,659,096
Sublette	37,000,068	58,355,766						343,891	95,699,725
Sweetwater	215,013,562	217,083,093	272,126,000				96,389,980	750,314	801,362,949
Teton								179,052	179,052
Uinta	316,630,268	199,602,011						538,554	716,770,833
Washakie	49,668,606	1,187,277				210,412		34,342	51,100,637
Weston	62,446,786	5,029,423				611,116		67,626	68,154,951
Total	2,889,361,320	1,238,243,618	1,256,360,63	16,915,156		8,490,463	96,389,980	9,159,716	5,314,923,888
% of Total	52	22	23	.4		.3	2	.3	

1986 Unit Valuation

County	Oil $/bbls	Gas $/MCF	Coal $/tons	Uranium $/tons	Iron Ore $/tons	Bentonite $/tons	Trona $/tons	Gypsum $/tons
Albany	24.67							
Big Horn	23.46	2.38				3.98		3.25
Campbell	24.16	2.46	6.75					
Carbon	23.66	3.67	26.11	50.21				
Converse	25.76	1.22	6.01	19.34				
Crook	23.42	.29				2.93		
Fremont	24.04	3.75		29.61				
Goshen	25.70							
Hot Springs	23.80	2.66	19.59					
Johnson	25.27	2.99				2.18		
Laramie	25.75	1.60						
Lincoln	24.75	3.61	20.03					
Natrona	16.99	3.59				2.15		
Niobrara	25.41	2.94						
Park	23.07	2.80				4.30		3.25
Platte								
Sheridan	24.13	2.46	24.71					
Sublette	25.01	2.15						
Sweetwater	25.88	2.71	21.16				8.94	
Teton								
Uinta	23.09	3.43						
Washakie	24.39	.62				2.90		
Weston	25.64	2.76				4.11		
State Average	23.46	3.01	9.30	30.96		3.28	8.94	3.25
Increase or Decrease Over 1985	-3.21	-.31	-.47	+17.65		-1.30	+.21	+.30

WYOMING MINERAL PRODUCTION ESTIMATES

1986-1990

1986 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	145,460							
Big Horn	4,406,389	1,420,457				738,698		175,000
Campbell	23,504,295	25,621,247	104,403,477					
Carbon	2,519,048	44,846,891	3,016,268					
Converse	8,413,877	32,571,336	2,989,225	50,000				
Crook	5,194,532	65,386				968,515		
Fremont	4,599,762	38,966,621		250,000				
Goshen	22,167							
Hot Springs	6,826,767	214,338	29,598					
Johnson	2,901,899	510,479				209,853		
Laramie	549,285	63,735						
Lincoln	510,572	23,189,860	4,097,301					
Natrona	10,255,438	7,662,679						
Niobrara	905,142	317,457						
Park	19,163,919	5,542,743				774		170,000
Platte								
Sheridan	201,628	9,737	1,400,000					
Sublette	1,400,449	26,663,674						
Sweetwater	7,864,246	78,726,658	12,194,131				11,500,000	
Teton								
Uinta	12,981,915	114,325,845						
Washakie	1,927,644	1,891,316				59,750		
Weston	2,305,336	1,785,759				122,407		
Total	116,599,770	404,396,218	128,130,000	300,000		2,099,997	11,500,000	345,000

1987 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	135,364							
Big Horn	4,100,558	1,511,099				786,432		185,000
Campbell	21,868,837	27,045,450	106,772,513					
Carbon	2,344,211	47,718,786	3,085,692					
Converse	7,827,178	34,649,792	3,055,401					
Crook	4,833,999	69,358				1,025,909		
Fremont	4,280,334	41,453,176		340,000				
Goshen	20,628							
Hot Springs	6,352,946	228,015	30,259					
Johnson	2,700,489	543,054				222,289		
Laramie	511,161	67,802						
Lincoln	475,135	24,669,661	4,188,890					
Natrona	9,543,646	8,151,654						
Niobrara	842,319	337,715				809		
Park	17,833,822	5,896,439						175,000
Platte								
Sheridan	187,633	10,359	1,400,000					
Sublette	1,303,249	28,365,148						
Sweetwater	7,318,418	83,750,398	12,466,712				11,750,000	
Teton								
Uinta	12,080,888	121,621,250	121,621,256					
Washakie	1,793,853	2,012,005	2,012,005			74,901		
Weston	2,145,332	1,899,713				129,660		
Total	108,500,000	430,000,874	254,632,728	340,000		2,240,000	11,750,000	360,000

1988 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	126,006							
Big Horn	3,817,070	1,598,991				1,000,000		170,000
Campbell	20,356,960	28,618,523	111,524,007					
Carbon	2,182,146	50,483,610	3,212,179					
Converse	7,288,555	36,665,164	3,082,709					
Crook	4,499,806	73,604				1,200,000		
Fremont	3,981,478	43,864,260		475,000				
Goshen	19,202							
Hot Springs	5,913,742	241,277	31,520					
Johnson	2,513,794	574,640				275,000		
Laramie	475,822	71,745						
Lincoln	442,288	26,105,538	4,363,427					
Natrona	8,883,857	8,628,787						
Niobrara	784,086	357,358						
Park	16,600,902	6,239,400				1,000		170,000
Platte								
Sheridan	174,662	10,961	1,200,000					
Sublette	1,213,151	30,014,980						
Sweetwater	6,812,467	88,621,660	12,986,158				12,100,000	
Teton								
Uinta	11,245,690	128,695,240						
Washakie	1,669,837	2,129,032				75,000		
Weston	1,997,017	2,010,208				155,000		
Total	100,998,538	455,004,978	136,400,000	475,000		2,706,000	12,100,000	340,000

1989 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	118,646							
Big Horn	3,594,098	1,686,883				1,100,000		150,000
Campbell	19,167,816	30,191,596	116,433,063					
Carbon	2,054,677	53,258,540	3,319,039					
Converse	6,862,797	38,680,536	3,288,589					
Crook	4,236,931	77,650				1,250,000		
Fremont	3,751,669	46,275,345		50,000				
Goshen	18,080							
Hot Springs	5,568,293	254,450	32,569					
Johnson	2,366,951	606,226				300,000		
Laramie	448,027	75,689						
Lincoln	416,451	27,539,436	4,508,567					
Natrona	8,363,397	9,099,920						
Niobrara	738,284	377,001						
Park	15,631,166	6,582,361				1,000		150,000
Platte								
Sheridan	164,459	11,564						
Sublette	1,142,285	31,664,817						
Sweetwater	6,414,520	93,492,922	13,418,173				12,150,000	
Teton								
Uinta	10,588,777	135,758,303						
Washakie	1,572,294	2,246,058				75,000		
Weston	1,880,362	2,120,703				175,000		
Total	95,099,980	480,000,000	141,000,000	50,000		2,901,000	12,150,000	300,000

1990 Production

County	Oil (Bbls)	Gas (MCF)	Coal (Tons)	Uranium (Tons)	Iron Ore (Tons)	Bentonite (Tons)	Trona (Tons)	Gypsum (Tons)
Albany	111,654							
Big Horn	3,382,297	1,774,530				1,160,000		150,000
Campbell	18,038,253	31,762,077	117,253,000					
Carbon	1,933,594	56,028,898	3,299,102					
Converse	6,458,371	40,692,588	3,288,589					
Crook	3,987,267	81,689				1,275,000		
Fremont	3,530,583	48,702,638		530,000				
Goshen	17,015							
Hot Springs	5,240,153	267,780	32,569					
Johnson	2,227,466	637,761				310,000		
Laramie	421,625	79,626						
Lincoln	391,910	28,971,960	4,708,567					
Natrona	7,871,964	9,573,272						
Niobrara	694,777	396,612						
Park	14,710,018	6,924,756				1,000		150,000
Platte								
Sheridan	154,767	12,165						
Sublette	1,074,970	33,311,926						
Sweetwater	6,036,511	98,356,159	13,418,175				12,250,000	
Teton								
Uinta	9,964,778	142,831,555						
Washakie	1,479,639	2,362,892				75,000		
Weston	1,769,551	2,231,016				179,000		
Total	89,497,163	505,000,000	142,000,002	530,000		3,000,000	12,250,000	300,000

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March 20, 1987

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Dear Ms. Mason:

We are pleased with the new Mineral Yearbook, but unfortunately, several mistakes have crept into the text which need to be pointed out. Listed below are errors we have discovered:

1986 WYOMING MINERAL YEARBOOK
John T. Goodier and Dale S. Hoffman

ERRATA

Table of Contents:
Total State Valuation should read Total Mineral Valuation

Page 36, graph legend:
Production in Tons should read Production in MCF

Page 45, graph legend:
Production in Tons should read Production in Bbls.

Page 124, Coal Production:
There should be no production from Uinta County. The total is 133,011,472 tons.

Please note these corrections, and I hope you find the publication useful and informative.

Sincerely,

John T. Goodier
Chief of Mineral Development

JG/at